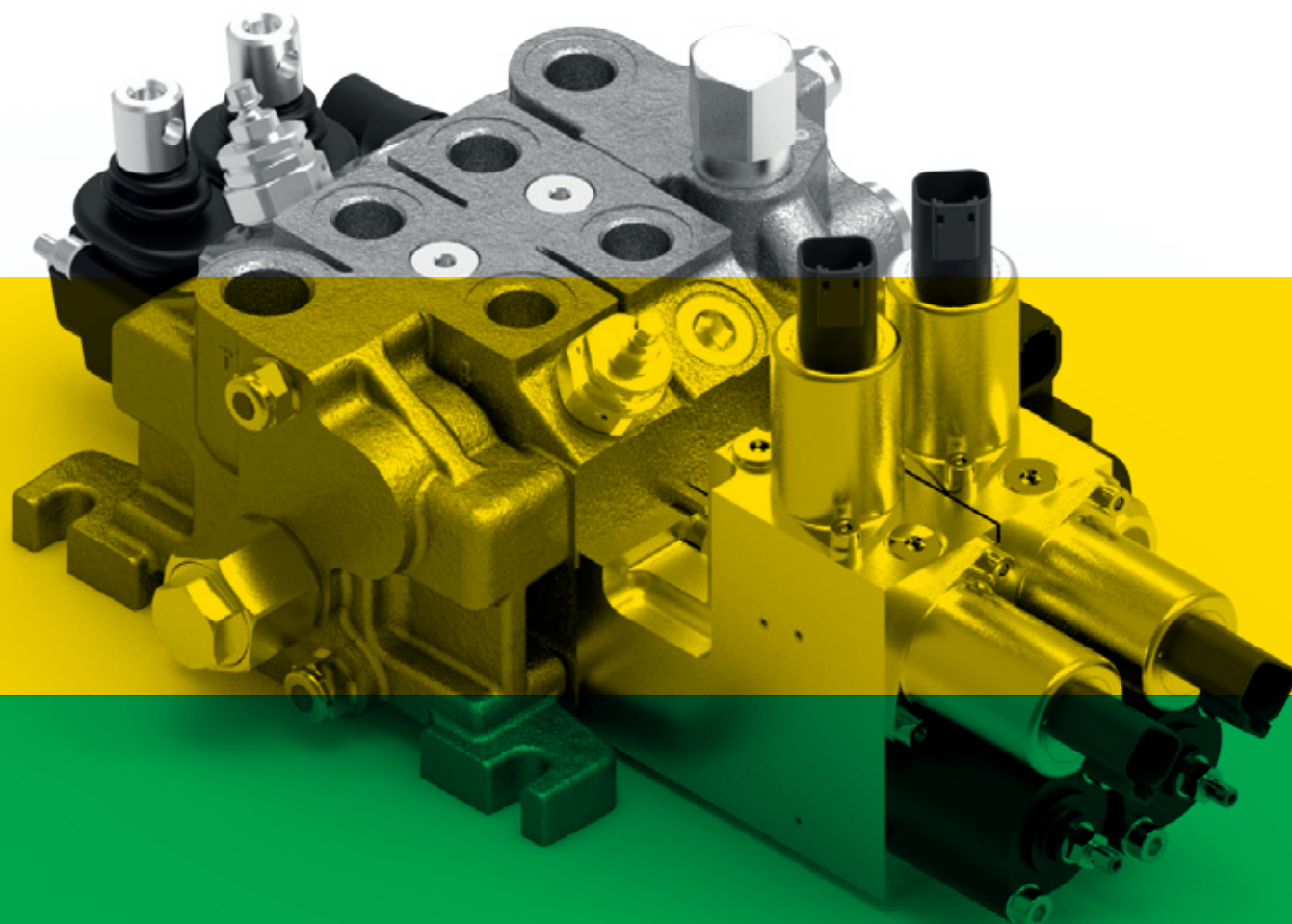


VD6 Series

Directional Control Valve

Technical Brochure

E0.254.0325.11.00IM00



VD6Z
sectional control valve
electro-hydraulic
proportional control



VD6LS
sectional control valve
load sense



VD6ZLS
sectional control valve load
sense and electro-hydraulic
proportional control



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001



Final revised edition - March 2025

Information and data in this catalogue are all referring to the standard product.
Salami's policy consists of a continuous product development; therefore, we reserve the rights to change product's specifications and data performances at any time and without any prior notice.

Contents

VD6Z.....	4
VD6LS	12
VD6ZLS	20



Technical Data

Nominal Flow	Q _n	45 l/min - (12 gpm US)
Max Flow	Q	60 l/min - (16 gpm US)
Max Pressure	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
	Pilot pressure tank port T _p	5 bar - (70 psi)
Spool Stroke (Positions 1 And 2)	± 6 mm - (0.236 in.)	
Number of sections	From 1 To 10	

Main Features

- Sectional design
- Parallel, Serie and Tandem Circuit
- Electro – hydraulic proportional spool control
- High metering spools
- Manual lever dual command
- Remote pilot pressure port
- Solenoid unloading pump flow
- Counter Pressure Valve
- Power Beyond HPCO
- Stackable with VD6A standard sections

Applications

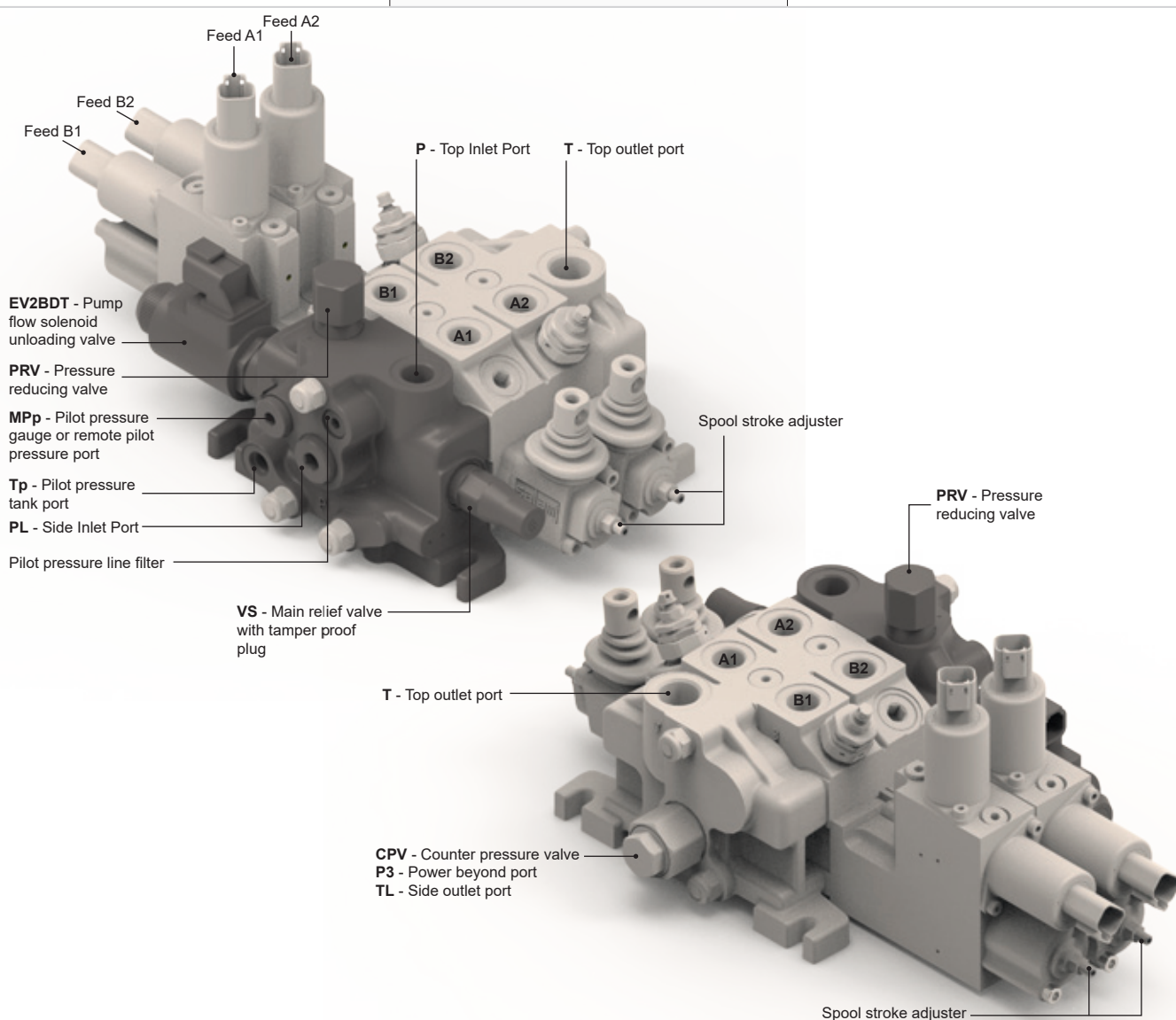
- Lifting Equipment
- Small Trucks
- Agriculture Equipment
- Radio remote mobile equipment
- Material handling

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VD6Z vs VD6A

FEATURES	VD6Z	VD6A
NEW INLET ELEMENT	Main relief valve, solenoid unloading pump flow, pressure reducing valve, pilot pressure remote port, pilot tank port	Main relief valve, solenoid unloading pump flow
OUTLET ELEMENT	VD6A standard	Standard
WORKING SECTIONS	Crossing pilot lines	Standard w/o pilot lines
STACKABLE WITH VD6A	Sections must be stacked after the inlet element and upstream the VD6A sections	Sections must be stacked downstream VD6Z sections
ELECTRO-HYDRAULIC PROPORTIONAL AND ON-OFF CONTROL	Fully integrated, no need of external pilot lines	NA
HYDRAULIC SPOOL CONTROL	Pilot pressure remote port used to feed hydraulic pilot joysticks	NA
METERING	High metering spools	Standard and high metering spools
WITH COUNTER PRESSURE VALVE CPV	Standard	NA
WITHOUT COUNTER PRESSURE VALVE CPV	In case of HPCO or 8 bar guaranteed in the return line in all working conditions	NA



EO.254.0325.11.001M00



Port Size and Thread

		P	PL	Tp	MPp	A/B	T	TL	TL2	P3
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X	X					
	G3/8	X	X			X				
	G1/2						X	X	X	X
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X	X					
	SAE8 (3/4-16 UNF)	X	X			X				
	SAE10 (7/8-14 UNF)						X	X	X	X

Valves

INLET ELEMENT VALVES		WORKING SECTION VALVES		OUTLET ELEMENT VALVE	
Main pressure relief valve direct type	VS	Service port relief	VA	Counter pressure valve	CPV
Pump flow solenoid unloading valve	EV1/EV2/EV3/EV4	Antishock and Anticavitation valve	AR		
Pressure reducing valve	PRV	Anticavitation valve	VR		
		Single/double acting conversion valve	CV		

Proportional Pressure Control Valve

ELECTRICAL DATA				
	KE1JA/KE1DT	KE2JA/KE2DT	ON-OFF	
VOLTAGE	12V	24V	12V	24V
MIN CURRENT	896mA	448mA	-	-
MAX CURRENT	1364mA	682mA	1400mA	700mA
RESISTANCE	4.72 Ω +/-5%	20.8 Ω +/-5%	4.72 Ω +/-5%	20.8 Ω +/-5%
PWM FREQUENCY	100HZ	100HZ	DIRECT CURRENT	DIRECT CURRENT
SUPER IMPOSED DITHER FREQUENCY	100HZ (AMPLITUDE 200mA)	100HZ (AMPLITUDE 100mA)	-	-
CONNECTOR	AMP JUNIOR TIMER (JA)			
	DEUTSCH DT04-2P (DT)			
PROTECTION CLASS	IP6K6			
HYDRAULIC DATA				
MAX VOLUME FLOW @ 6bar ΔP	2.5-5 l/min			
MAX PRESSURE FROM PRV	35bar			
MAX WORKING PRESSURE	25bar			
MAX TANK SIDE PRESSURE	5bar			
INTERNAL LEAKAGE @ 35bar 32cSt	< 0.06 l/min (DE-ENERGIZED) <0.15 l/min (ENERGIZED)			
CONTAMINATION LEVEL	MIN FILTRATION: 20/18/15 ACCORDING TO ISO 4406			
FILTERSCREEN SIZE	200 μm			

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Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS

	P	PL	MPp	TP	
Z01	OPEN	PLUGGED	PLUGGED	OPEN	
Z02	PLUGGED	OPEN	PLUGGED	OPEN	
Z03	OPEN	PLUGGED	OPEN	PLUGGED	
Z04	PLUGGED	OPEN	OPEN	PLUGGED	

OUTLET ELEMENT CONFIGURATIONS

	T	TL	TL2	P3	CPV	NOTE
U8	OPEN	NA	NA	NO	YES	-
U9	PLUGGED	NA	OPEN	NO	YES	-
U5	OPEN	NA	NA	YES	NO	8 bar min on the return line
U5L2	PLUGGED	NA	OPEN	YES	NO	8 bar min on the return line
U7	OPEN	NA	NA	PLUGGED	NO	Closed centre
U7L2	PLUGGED	NA	OPEN	PLUGGED	NO	Closed centre
U4	OPEN	PLUGGED	NA	NO	NO	8 bar min on the return line
U3	PLUGGED	OPEN	NA	NO	NO	8 bar min on the return line

MATCHING CONFIGURATIONS

	Z01	Z02	Z03	Z04
U8	X	X	NA	NA
U9	X	X	NA	NA
U5	X	X	X	X
U5L2	X	X	X	X
U7	X	X	X	X
U7L2	X	X	X	X
U4	X	X	X	X
U3	X	X	X	X

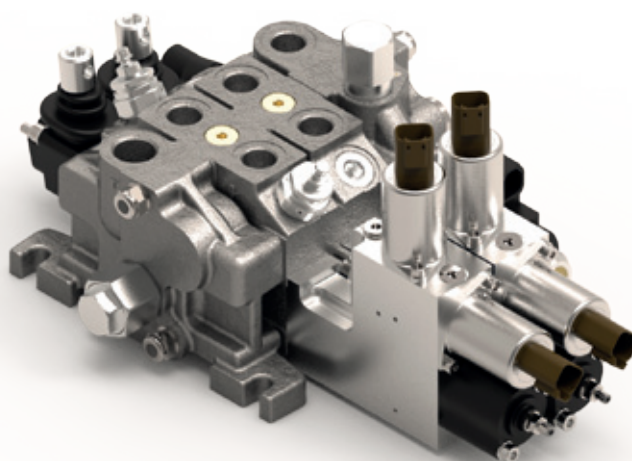
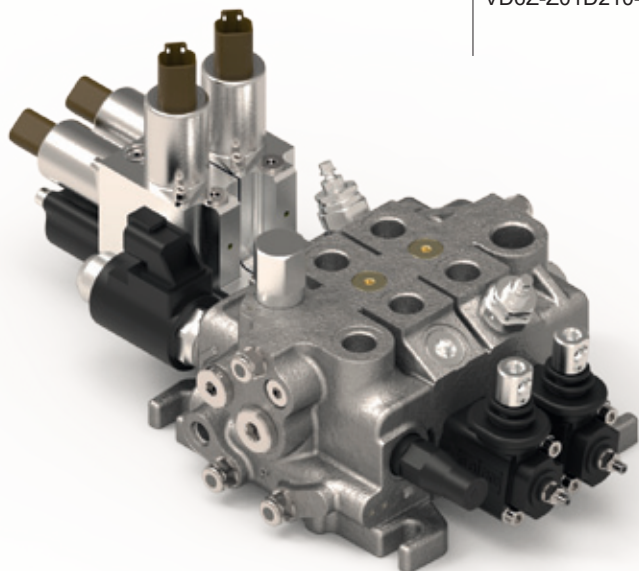
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VD6Z Configurations

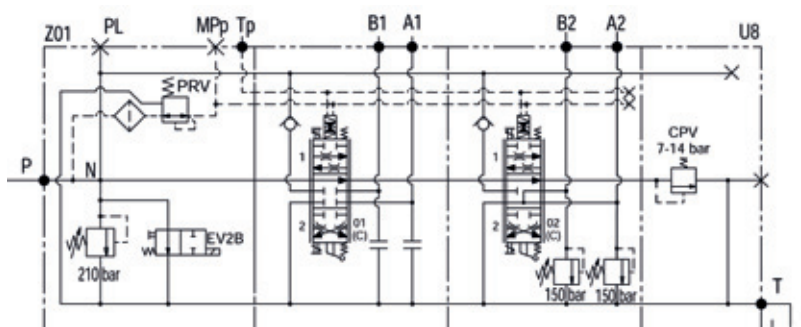
Example 1

2 Bank Electro-proportional 24V

VD6Z-Z01D210-EV2BDT/P01C-PRA.PRB-NLEA-KE2DT/
/P02C-VA150A.VA150B-NLEA-KE2DT/U8G



Hydraulic Circuit



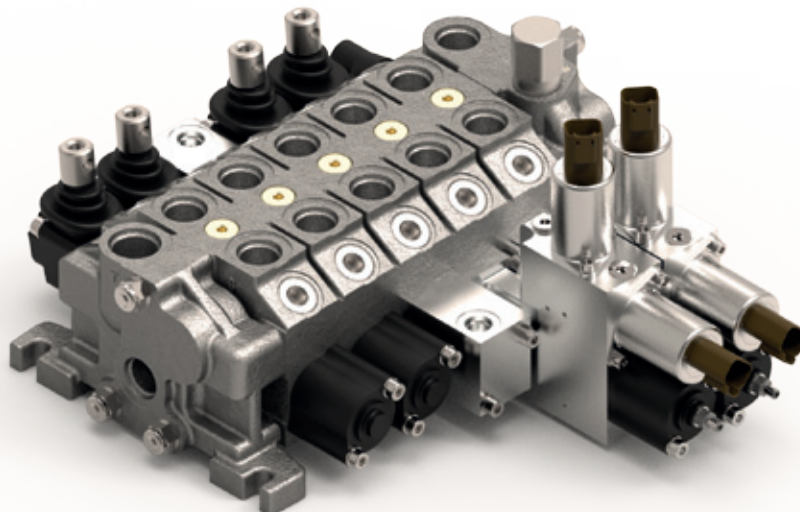
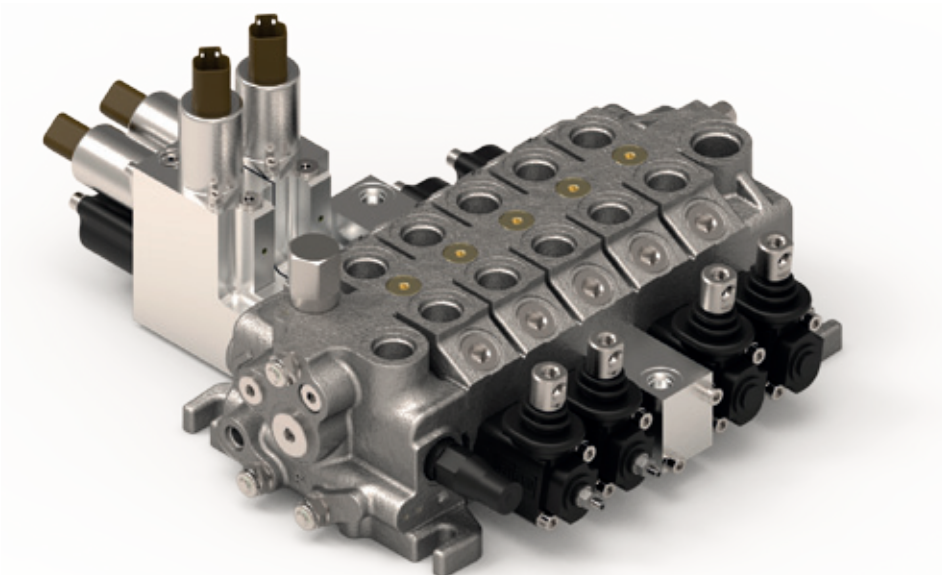


VD6Z Configurations

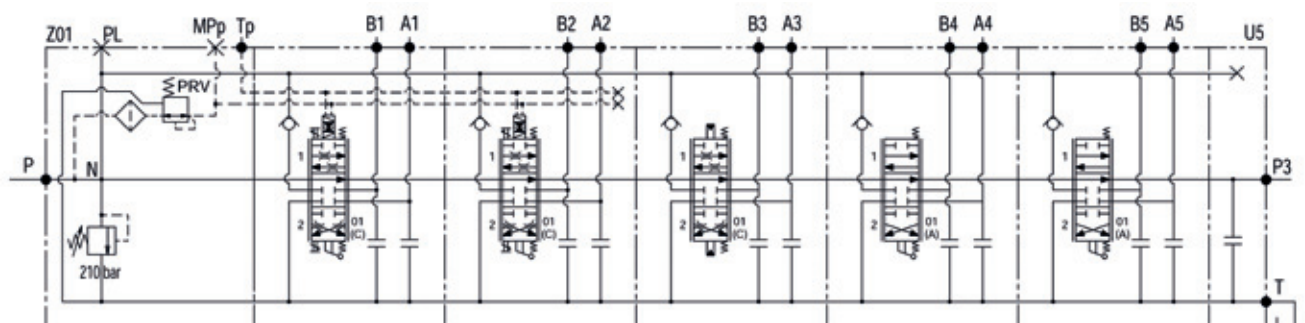
Example 2

5 Bank electro-proportional, hydraulic pilot and manual controlled sections

VD6Z-Z01D210/2XP01C-PRA.PRB-NLEA-KE2DT/
/P01C-PRA.PRB-IP/
/2XP01A-PRA.PRB-NLA-C2/U5S



Hydraulic Circuit

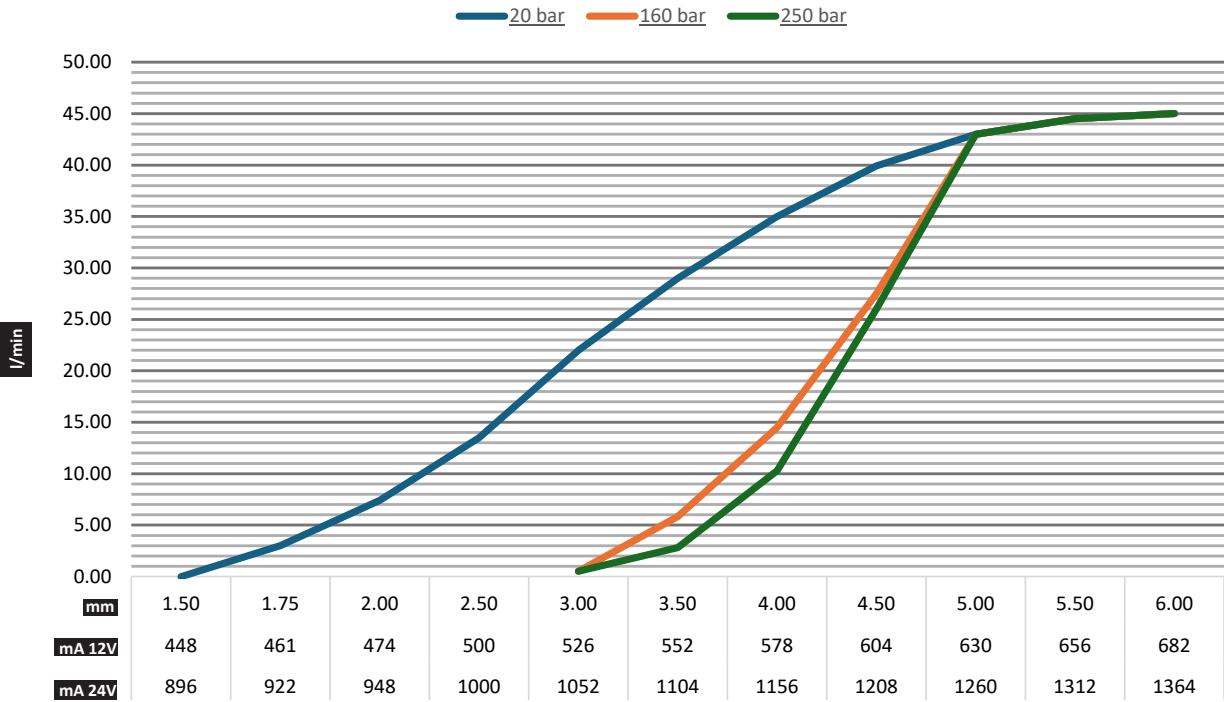




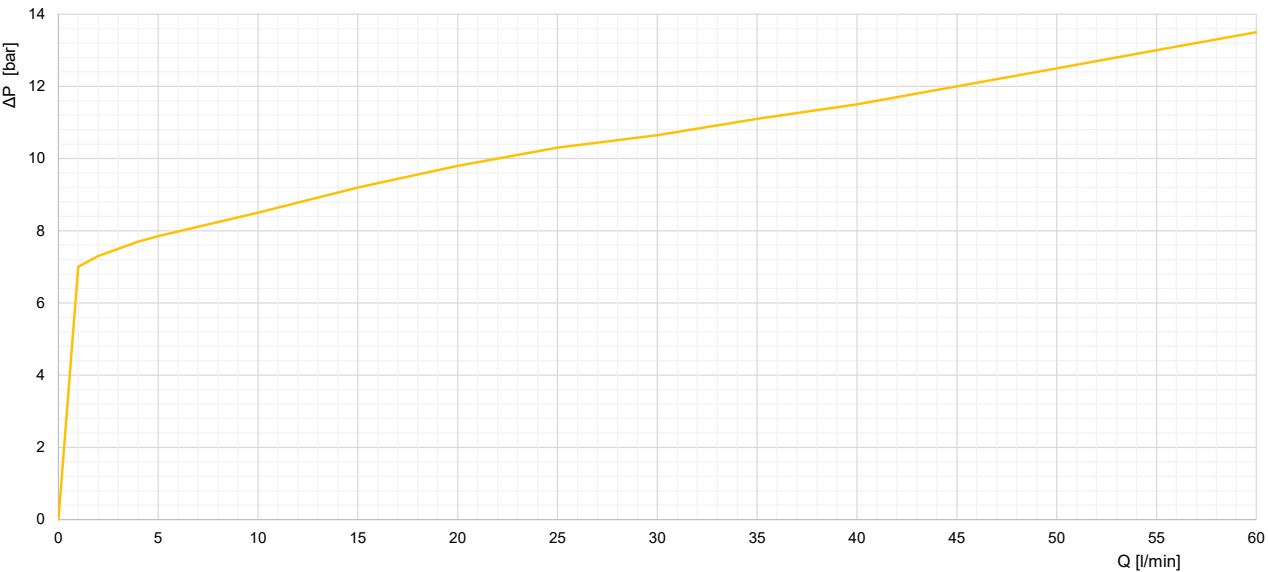
Flow Vs Spool Stroke Metering Curves

Oil ISO VG32 at 21 cSt

VD6Z spool metering Q vs spool stroke and current



CPV characteristic curve, cartridge valve only



E0.254.0325.11.00IM00



How to Order

► See Technical Catalogue **VD6A** (E0.05.1011.02.03)

VD6Z	Z01	D	210	-	EV2BDT	/	2	X	P	01C	-	VA	150	A	.	VA	150	B	-	NLE	A	-	KE2DT	/	U8	G
	A	B	C		D		E	F	G			H		I		H		I		L	M		N		O	P

A	INLET ELEMENT
	Z01-Z02-Z03-Z04

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 25 to 350 bar (363 to 5070 psi)

D	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

E	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS
----------	---

F	WORKING SECTIONS
P	Parallel circuit
S	Series circuit
T	Tandem circuit

G	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering
03C	Double acting motor spool ("B" port blocked) for hydraulic control - High metering
04C	Double acting motor spool ("A" port blocked) for hydraulic control - High metering

H	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

P	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

O	OUTLET ELEMENT
	U3-U4-U5-U5L2-U7-U7L2-U8-U9

N	SPOOL POSITIONINGS
KE1JA	Electro-hydraulic proportional and ON-OFF control 12V - AMP JUNIOR TIMER
KE2JA	Electro-hydraulic proportional and ON-OFF control 24V - AMP JUNIOR TIMER
KE1DT	Electro-hydraulic proportional and ON-OFF control 12V - DEUTSCH DT04-2P
KE2DT	Electro-hydraulic proportional and ON-OFF control 24V - DEUTSCH DT04-2P

M	CONTROL SIDE
A	A port side

L	SPOOLS CONTROLS
NLE	Manual lever box with spool stroke adjuster, dual manual command.

I	PORT ON WHICH THE VALVE IS MOUNTED
----------	---



Technical Data

Max Flow	Q	60 l/min - (16 gpm US)
Max Pressure	LS Main Relief bar	320 bar - (4600 psi)
	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
Spool Stroke (Positions 1 And 2)	$\pm 6 \text{ mm} - (0.236 \text{ in.})$	
Number of sections	From 1 To 8	

Main Features

- Sectional design
- Parallel Circuit
- LS main relief valve and pump flow main relief valve
- Solenoid unloading pump flow
- High metering double acting cylinder and motor spools
- Spool Control: manual, manual joystick, cable remote, hydraulic piloted, pneumatic piloted.
- Spool positioning: spring centred, detent, friction detent

Applications

- Lifting Equipment
- Small Trucks
- Agriculture Equipment
- Material handling

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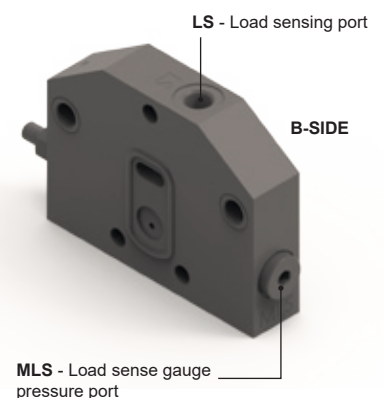
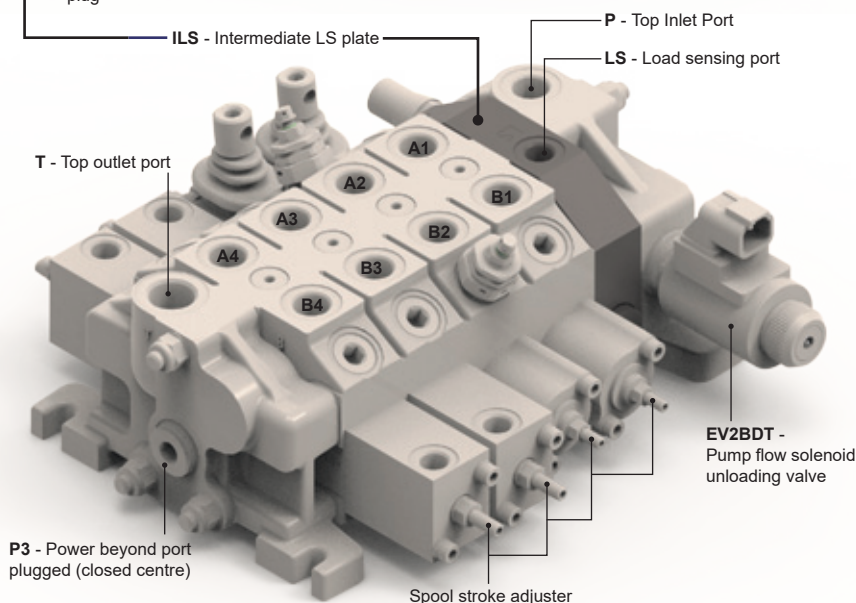
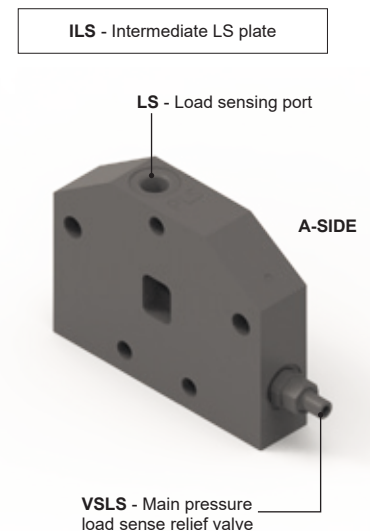
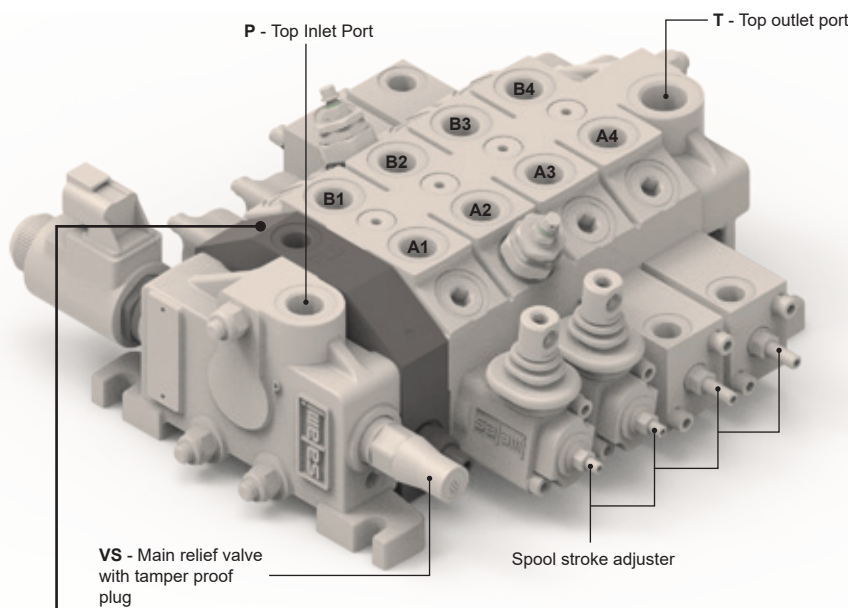


VD6LS

Closed Centre for variable displacement load sense pump

VD6LS vs VD6A

FEATURES	VD6LS	VD6A
INLET ELEMENT	VD6A standard	VD6A standard
NEW INTERMEDIATE LS PLATE	LS main relief valve, LS port	NA
OUTLET ELEMENT	VD6A standard	VD6A standard
WORKING SECTIONS	Spool with shuttle valve and ls crossing line	Standard
SPOOL FLOW	45-60 l/min @ 14-26 bar pump stand-by pressure	Standard
	35-50 l/min @ 14-26 bar pump stand-by pressure	High metering
STACKABLE WITH VD6A	NA	NA
SPOOL CONTROL	NL,MP, SL, TC, L1/L2, IP, PP, P1/P2	NL,MP, SL, TC, L1/L2, IP, PP, P1/P2, E7,E8,E9,E10
SPOOL POSITIONING	C2, C3, R2, R4, R5, C0	See VD6A catalogue
METERING	High metering spools	Standard and high metering spools



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Port Size and Thread

		P	PL	LS	A/B	T	TL2
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X			
	G3/8	X	X		X		
	G1/2					X	X
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X			
	SAE8 (3/4-16 UNF)	X	X		X		
	SAE10 (7/8-14 UNF)					X	X

Valves

INLET ELEMENT VALVES		INTERMEDIATE PLATE VALVES		WORKING SECTION VALVES	
Main pressure relief valve direct type	VS - Pressure setting 20-30 bar higher than VSLS pressure setting	Main pressure load sense relief valve	VSLS	Service port relief	VA
Pump flow solenoid unloading valve	EV1/EV2/EV3/EV4			Antishock and Anticavitation valve	AR
				Anticavitation valve	VR
				Single/double acting conversion valve	CV

Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS					
	P	PL	G		
01	OPEN	NA	NA		
02	PLUGGED	OPEN	NA		
03	OPEN	OPEN	NA		
21	OPEN	NA	OPEN		
22	NA	OPEN	OPEN		
OUTLET ELEMENT CONFIGURATIONS					
	T	TL	TL2	P3	NOTES
U7	OPEN	NA	NA	PLUGGED	CLOSED CENTRE
U7L2	PLUGGED	NA	OPEN	PLUGGED	CLOSED CENTRE
INTERMEDIATE LS PLATE CONFIGURATIONS					
	LS				
ILS	OPEN				

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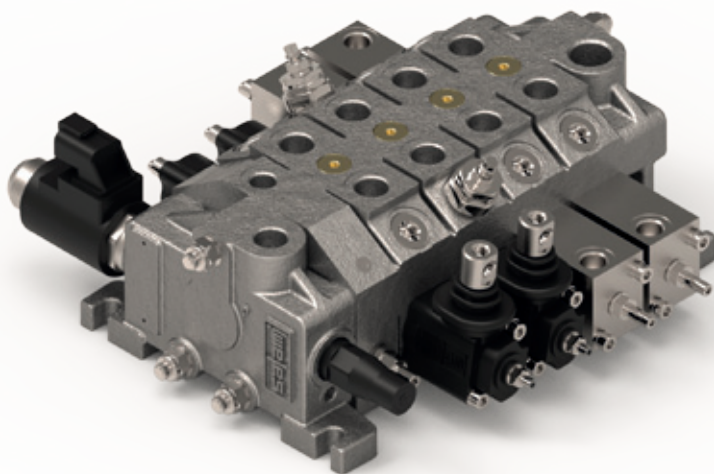


Inlet and Outlet Element Matching Configurations

MATCHING CONFIGURATIONS

	01	02	02	21	22
U7	X	X	X	X	X
U7L2	X	X	X	X	X

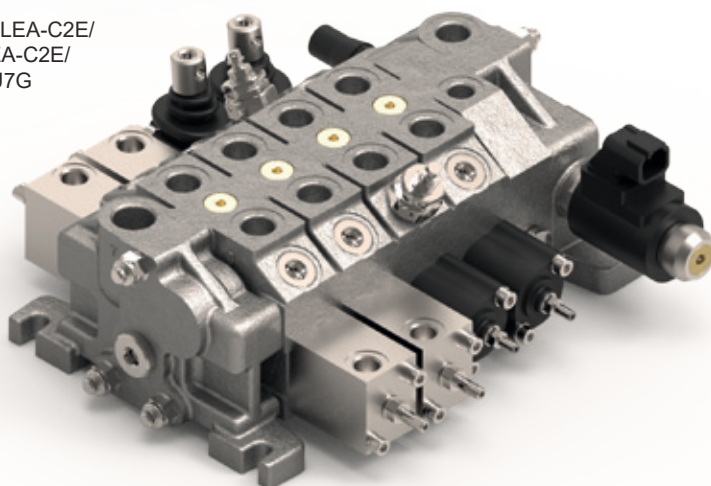
VD6LS Configurations



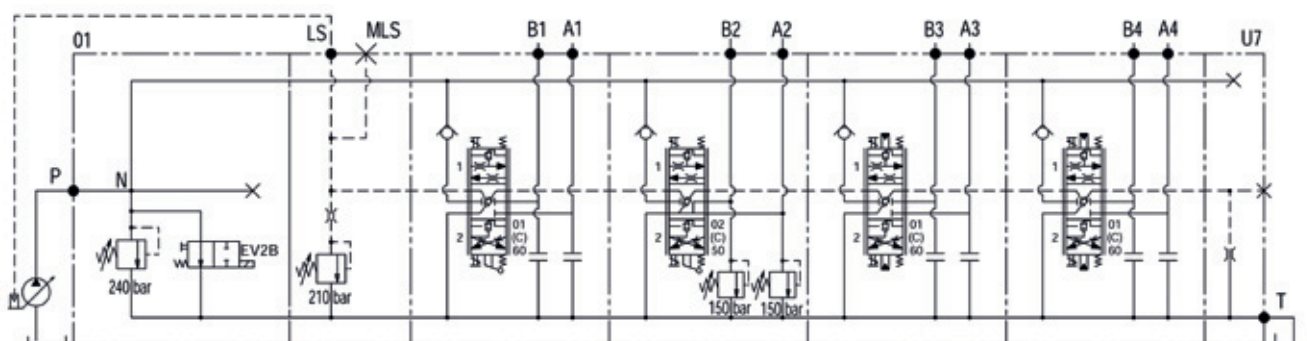
Example

4 Bank

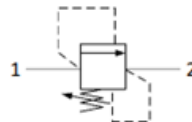
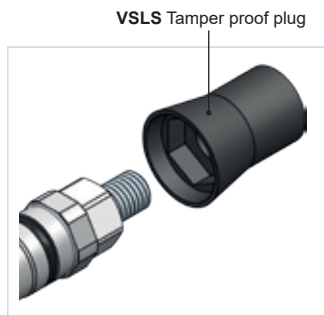
VD6LS-01D240-EV2BDT/ILS(210)/P01C60-PRA.PRB-NLEA-C2E/
/P02C50-VA150A.VA150B-NLEA-C2E/
/2XP01C60-PRA.PRB-IP1RE/U7G



Hydraulic Circuit

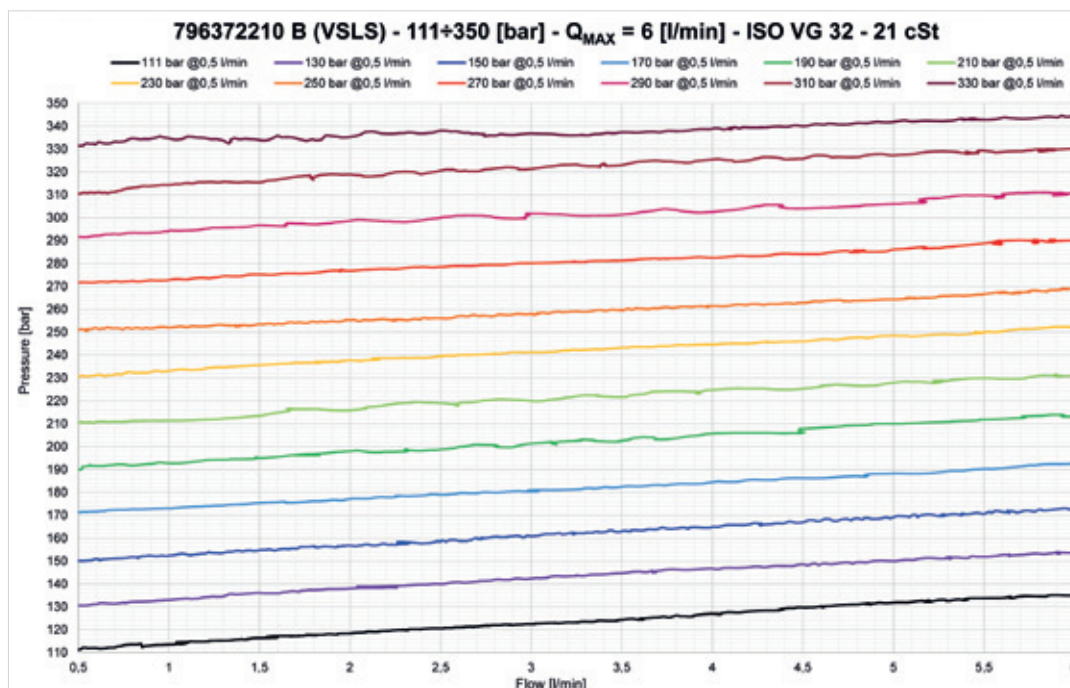
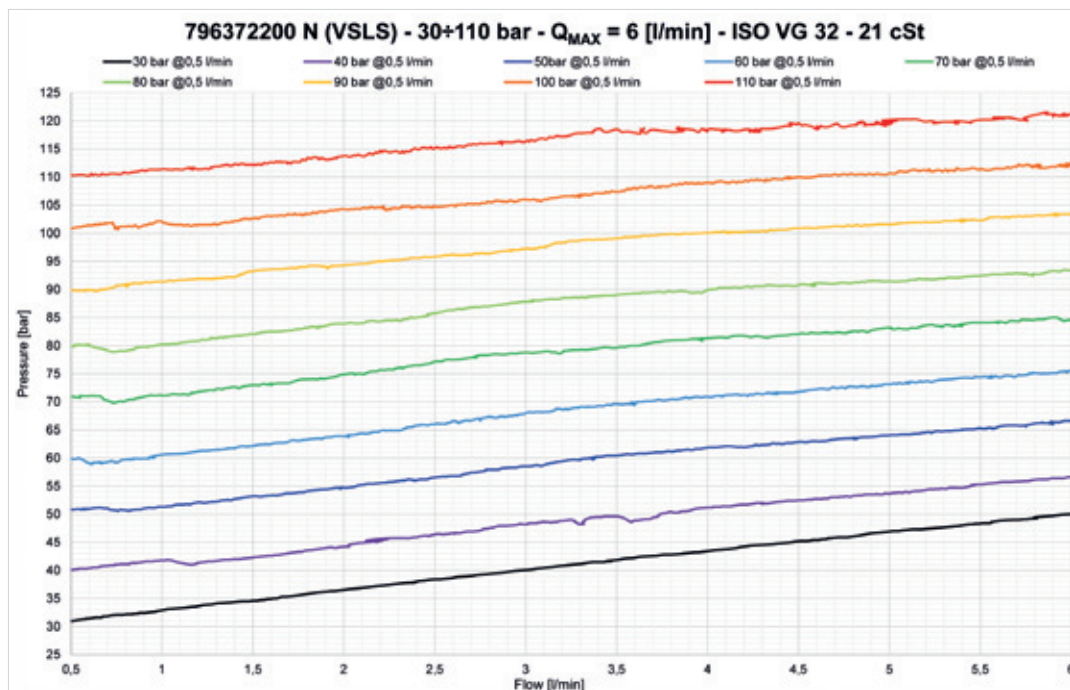


Load Sense Main Relief Valve - VSLS



Q _{MAX}
6l/min – 1.5GPM

Pressure setting range
30-110 bar
111-350 bar



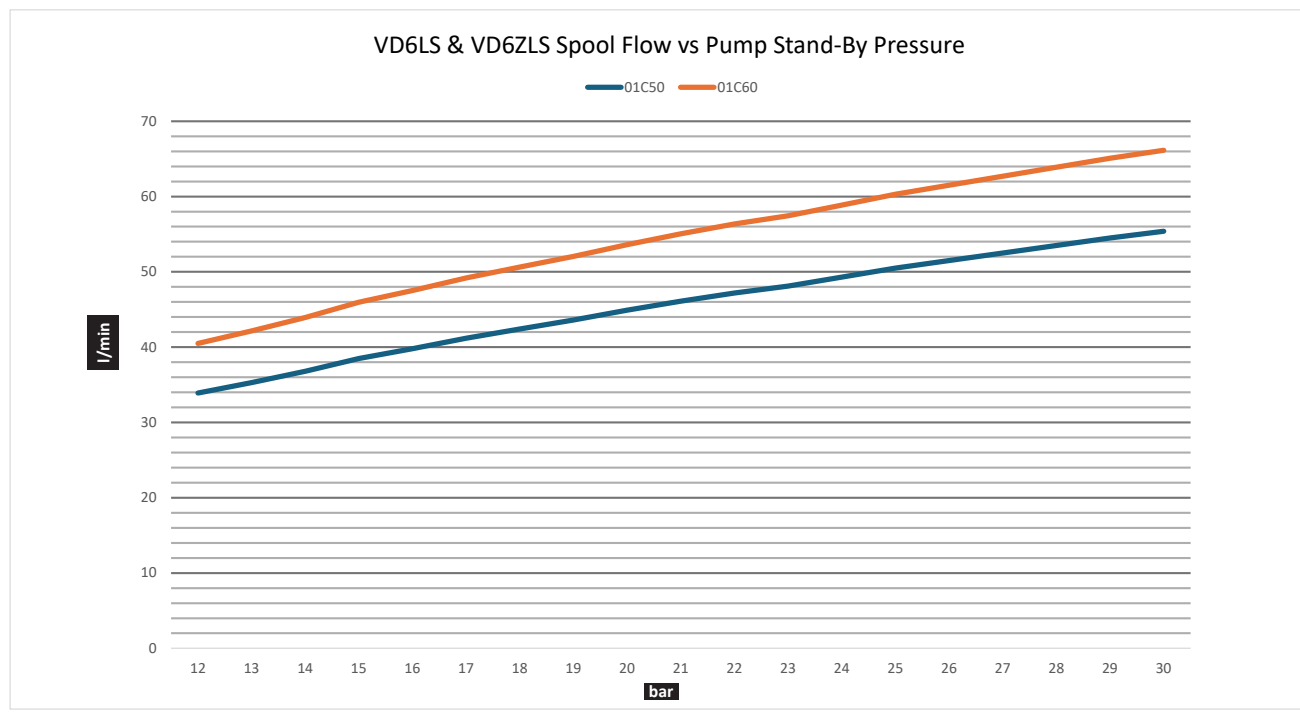
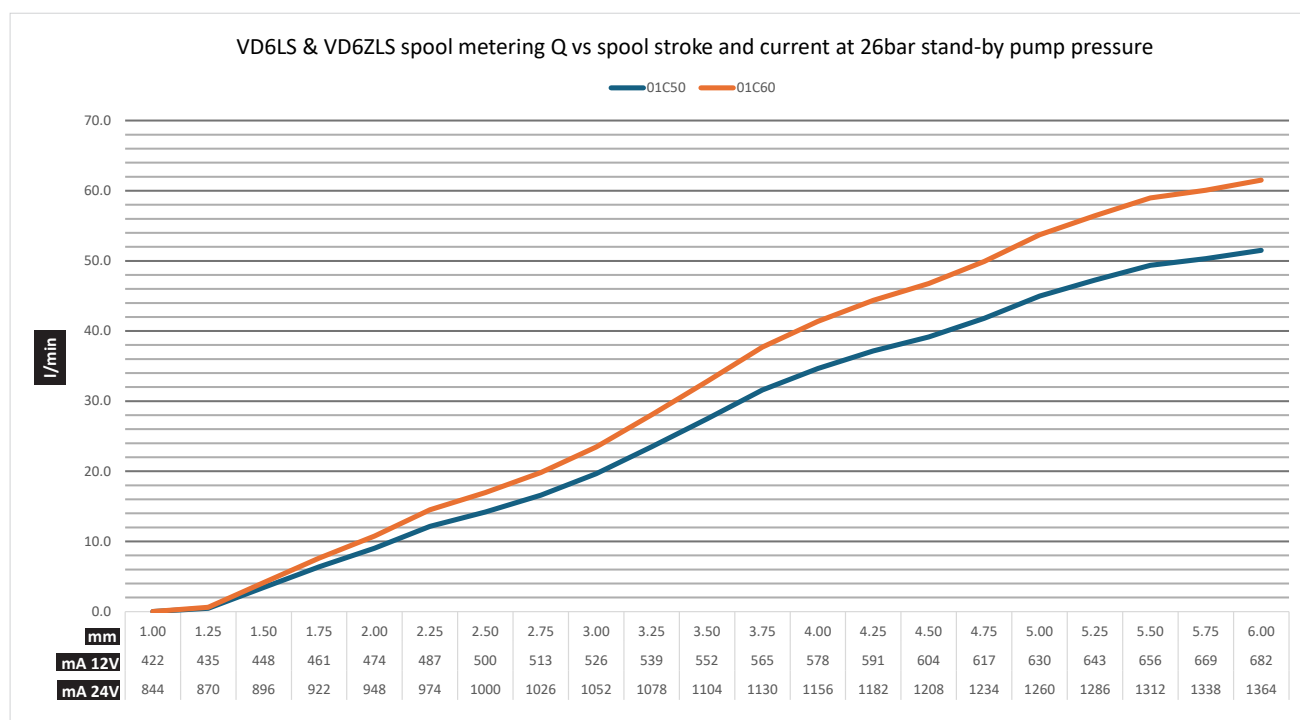


Spools

TYPE	FLOW CONTROL
01C60 - Double acting cylinder spool	45-60l/min @ 14-26 bar pump stand-by pressure
02C60 - Double acting motor spool	
01C50 - Double acting cylinder spool	35-50l/min @ 14-26 bar pump stand-by pressure
02C50 - Double acting motor spool	

Oil ISO VG32 at 21 cSt

Flow Vs Spool Stroke Metering Curves



EO.254.0325.11.001M00



How to Order

► See Technical Catalogue **VD6A** (E0.05.1011.02.03)

VD6LS	01	D	210	-	EV2BDT	/	ILS	210	/	4	X	P	01C	60	-	VA	150	A	.	VA	150	B	-	NLE	A	-	C2E	/	U7	G
	A	B	C		D		E	F		G	H		I			L		M		L		M		N	O		P		Q	R

A	INLET ELEMENT
	01-02-03-21-22

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 25 to 350 bar (360 to 5070 psi)

D	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

E	INTERMEDIATE LS PLATE
	ILS

F	VSLs SETTING
	30-110 bar (435 to 1595 psi)
	111-350 bar (1600 to 5070 psi)

G	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS

H	WORKING SECTIONS
P	Parallel circuit

I	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering

I	SPOOL NOMINAL FLOW
50	35-50l/min @ 14-26 bar pump stand-by pressure
60	45-60l/min @ 14-26 bar pump stand-by pressure

L	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

R	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

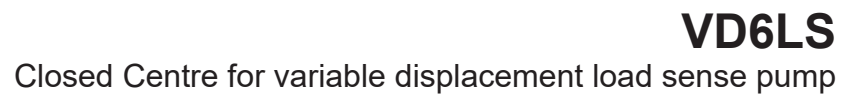
Q	OUTLET ELEMENT
	U7-U7L2

P	SPOOL POSITIONINGS
C2E	Spring Centred Cap with spool stroke adjuster
C0	Friction Detent
R2	Two position 1&2 detent with spring return to neutral
R4	Detent on position 1 with spring return to neutral
R5	Detent on position 2 with spring return to neutral

O	CONTROL SIDE
A	A port side
B	B port side

N	SPOOLS CONTROLS
SL	Spool End with wiper seal, w/o lever box
NLE	Manual lever box with spool stroke adjuster
TC	Cable Control Connector Kit
PP	Pneumatic Pilot Control
IP1RE	Hydraulic Pilot Control with spool stroke adjusters and top ports

M	PORT ON WHICH THE VALVE IS MOUNTED

[illegible]



Technical Data

Max Flow	Q	60 l/min - (16 gpm US)
Max Pressure	LS Main Relief bar	320 bar - (4600 psi)
	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
	Pilot pressure tank port Tp	5 bar - (70 psi)
Spool Stroke (Positions 1 And 2)	± 6 mm - (0.236 in.)	
Number of sections	From 1 To 8	

Main Features

- Sectional design
- Parallel Circuit
- LS main relief valve and pump flow main relief valve
- Electro – hydraulic proportional spool control
- High metering double acting cylinder and motor spools
- Manual lever dual command
- Remote pilot pressure port
- Solenoid unloading pump flow
- Spool Control: Electro proportional, manual, manual joystick, cable remote, hydraulic piloted, pneumatic piloted.
- Spool positioning: spring centred, detent, friction detent
- Stackable with VD6LS sections
- Spool Control: manual, manual joystick, cable remote, hydraulic piloted, pneumatic piloted.
- Spool positioning: spring centred, detent, friction detent

Applications

- Lifting Equipment
- Small Trucks
- Agriculture Equipment
- Radio remote mobile equipment
- Material handling

E0.254.0325.11.00IM00



VD6ZLS vs VD6LS

FEATURES	VD6ZLS	VD6LS
INLET ELEMENT	Main relief valve, solenoid unloading pump flow, pressure reducing valve, pilot pressure remote port, pilot tank port	Main relief valve, solenoid unloading pump flow
NEW INTERMEDIATE LS PLATE	LS main relief valve, LS port	LS main relief valve, LS port
OUTLET ELEMENT	VD6A standard	VD6A standard
WORKING SECTIONS	Spool with shuttle valve, LS crossing line, crossing pilot lines	Spool with shuttle valve, LS crossing line
STACKABLE WITH VD6LS	Sections must be stacked after the intermediate LS plate and upstream the VD6LS sections	Sections must be stacked downstream VD6ZLS sections
ELECTRO-HYDRAULIC PROPORTIONAL AND ON-OFF CONTROL	Fully integrated, no need of external pilot lines	NA
HYDRAULIC SPOOL CONTROL	Pilot pressure remote port used to feed hydraulic pilot joysticks	NA
SPOOL FLOW	40-60 l/min @ 14-26 bar pump stand-by pressure	40-60 l/min @ 14-26 bar pump stand-by pressure
	25-45 l/min @ 14-26 bar pump stand-by pressure	25-45 l/min @ 14-26 bar pump stand-by pressure
SPOOL CONTROL	SK,LK,NL,MP, SL, TC, L1/L2, IP, PP, P1/P2	NL,MP, SL, TC, L1/L2, IP, PP, P1/P2
SPOOL POSITIONING	C2, C3, R2, R4, R5, C0	C2, C3, R2, R4, R5, C0
STACKABLE WITH VD6A	NA	NA
OUTLET ELEMENT CONFIGURATION	Closed centre	Closed centre

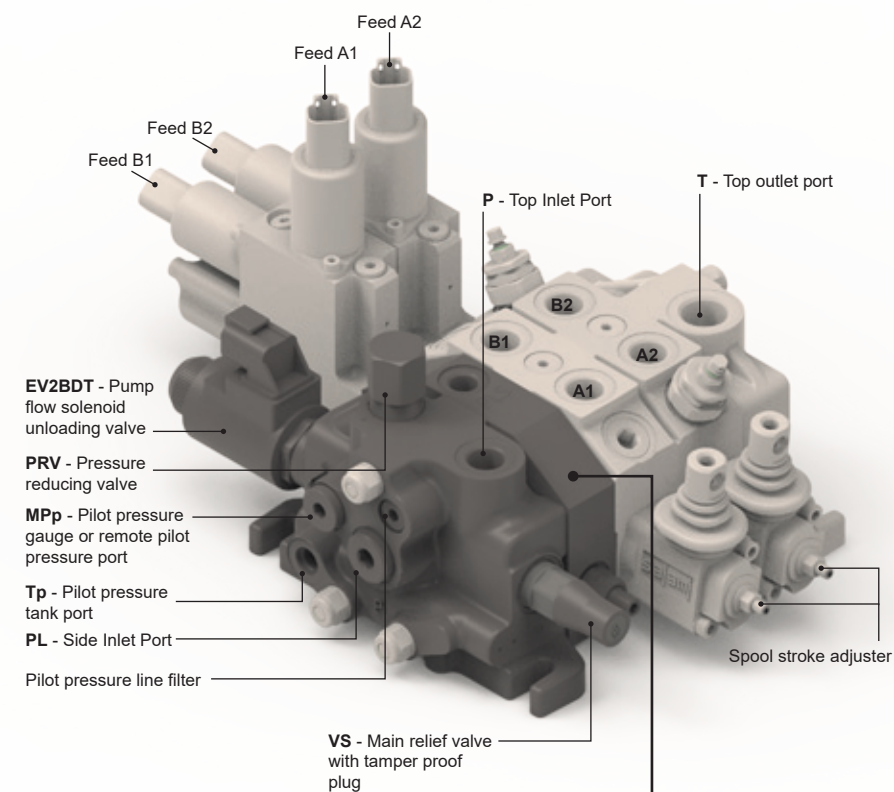
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VD6ZLS

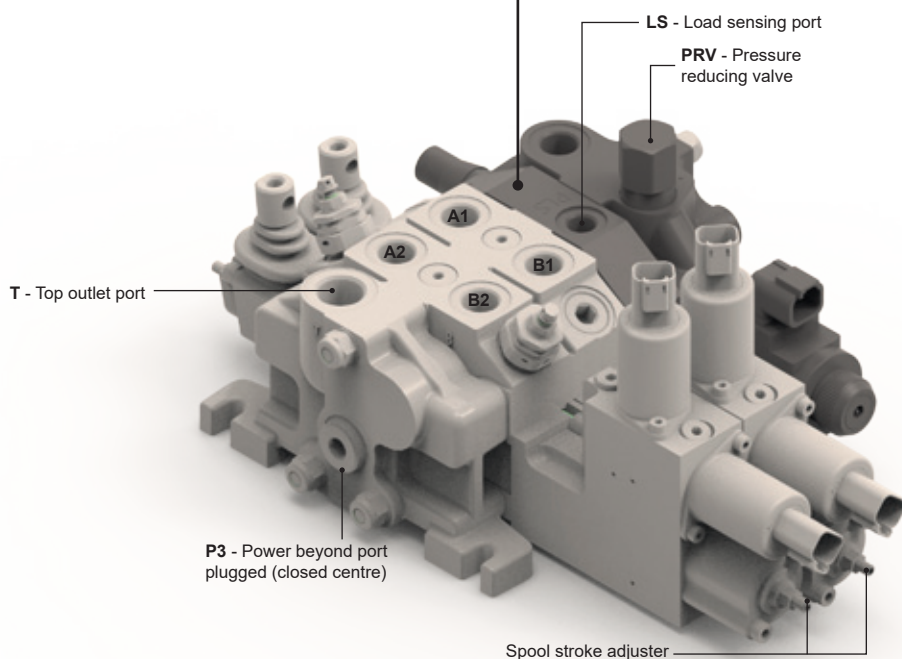
Electro-proportional for variable displacement LS pump



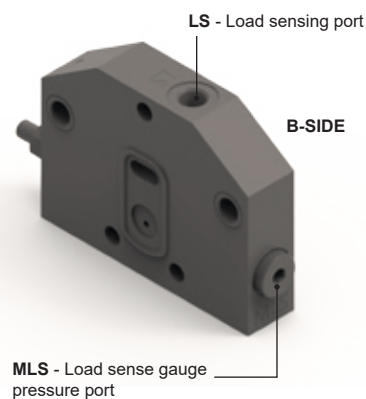
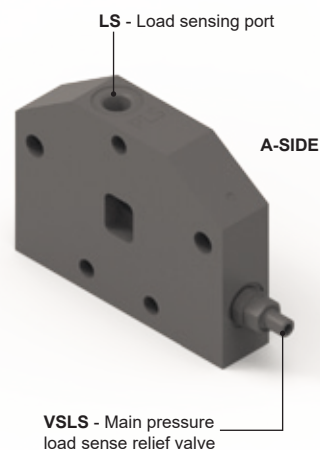
VD6ZLS Functional Description



ILS - Intermediate LS plate



ILS - New intermediate LS plate port



E0.254.0325.11.00IM00

**Port Size and Thread**

		P	PL	Tp	Pp	LS	A/B	T	TL2
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X	X	X			
	G3/8	X	X				X		
	G1/2							X	X
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X	X	X			
	SAE8 (3/4-16 UNF)	X	X				X		
	SAE10 (7/8-14 UNF)							X	X

Valves

INLET ELEMENT VALVES		INTERMEDIATE PLATE VALVES		WORKING SECTION VALVES	
Main pressure relief valve direct type	VS - Pressure setting 20-30 bar higher than VSLS pressure setting	Main pressure load sense relief valve	VSLS	Service port relief	VA
Pump flow solenoid unloading valve	EV1/EV2/EV3/EV4			Antishock and Anticavitation valve	AR
Pressure reducing valve	PRV			Anticavitation valve	VR
				Single/double acting conversion valve	CV

Proportional Pressure Control Valve**ELECTRICAL DATA**

	KE1JA/KE1DT	KE2JA/KE2DT	ON-OFF	
VOLTAGE	12V	24V	12V	24V
MIN CURRENT	870mA	435mA	-	-
MAX CURRENT	1364mA	682mA	1400mA	700mA
RESISTANCE	4.72 Ω +/-5%	20.8 Ω +/-5%	4.72 Ω +/-5%	20.8 Ω +/-5%
PWM FREQUENCY	100HZ	100HZ	DIRECT CURRENT	DIRECT CURRENT
SUPER IMPOSED DITHER FREQUENCY	100HZ (AMPLITUDE 200mA)	100HZ (AMPLITUDE 100mA)	-	-
CONNECTOR	AMP JUNIOR TIMER (JA)			
	DEUTSCH DT04-2P (DT)			
PROTECTION CLASS	IP6K6			

HYDRAULIC DATA

MAX VOLUME FLOW @ 6bar ΔP	2.5-5 l/min
MAX PRESSURE FROM PRV	35bar
MAX WORKING PRESSURE	25bar
MAX TANK SIDE PRESSURE	5bar
INTERNAL LEAKAGE @ 35bar 32cSt	< 0.06 l/min (DE-ENERGIZED) <0.15 l/min (ENERGIZED)
CONTAMINATION LEVEL	MIN FILTRATION: 20/18/15 ACCORDING TO ISO 4406
FILTERSCREEN SIZE	200 μm

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Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS

	P	PL	MPp	Tp	
Z01	OPEN	PLUGGED	PLUGGED	OPEN	
Z02	PLUGGED	OPEN	PLUGGED	OPEN	
Z03	OPEN	PLUGGED	OPEN	PLUGGED	
Z04	PLUGGED	OPEN	OPEN	PLUGGED	

OUTLET ELEMENT CONFIGURATIONS

	T	TL	TL2	P3	NOTES
U7	OPEN	NA	NA	PLUGGED	CLOSED CENTRE
U7L2	PLUGGED	NA	OPEN	PLUGGED	CLOSED CENTRE

INTERMEDIATE LS PLATE CONFIGURATIONS

	LS	
ILS	OPEN	

MATCHING CONFIGURATIONS

	Z01	Z02	Z03	Z04	
U7	X	X	X	X	
U7L2	X	X	X	X	

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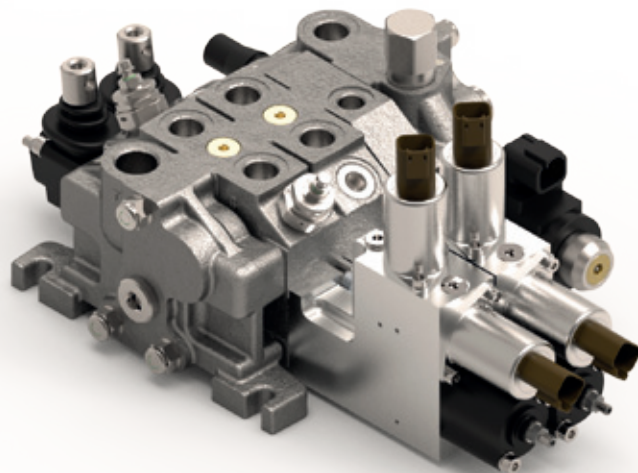
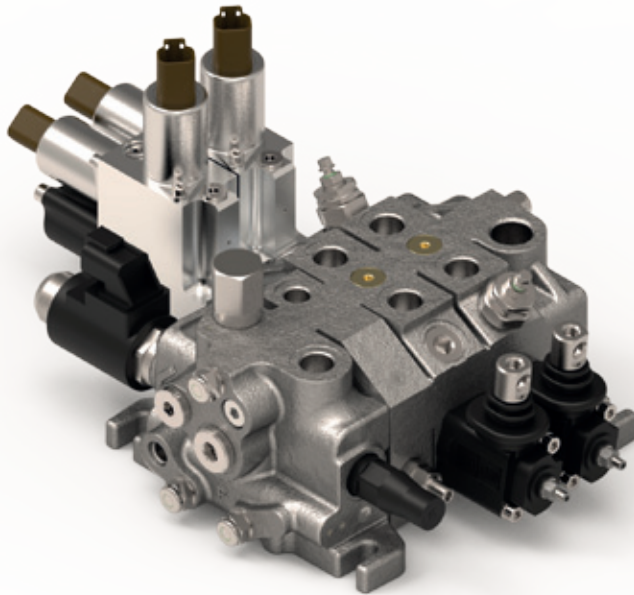


VD6ZLS Configurations

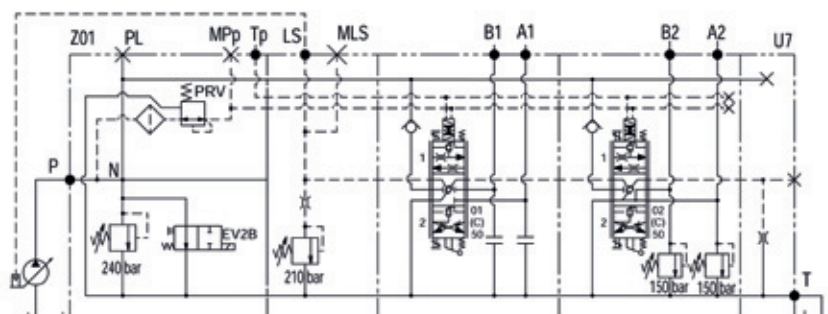
Example

2 Bank

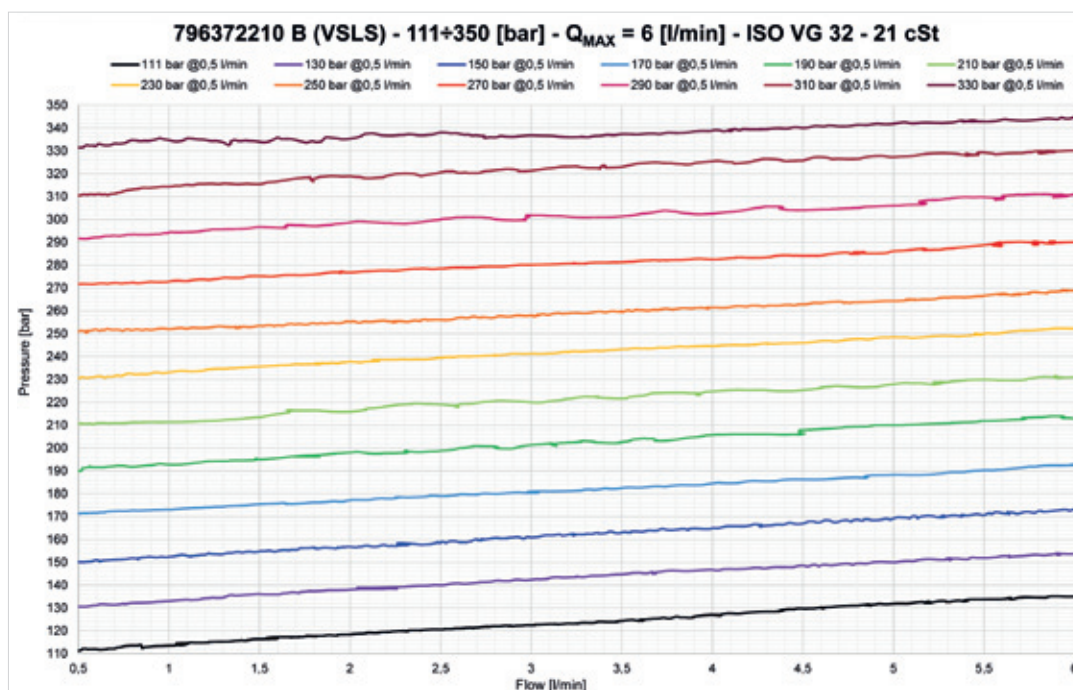
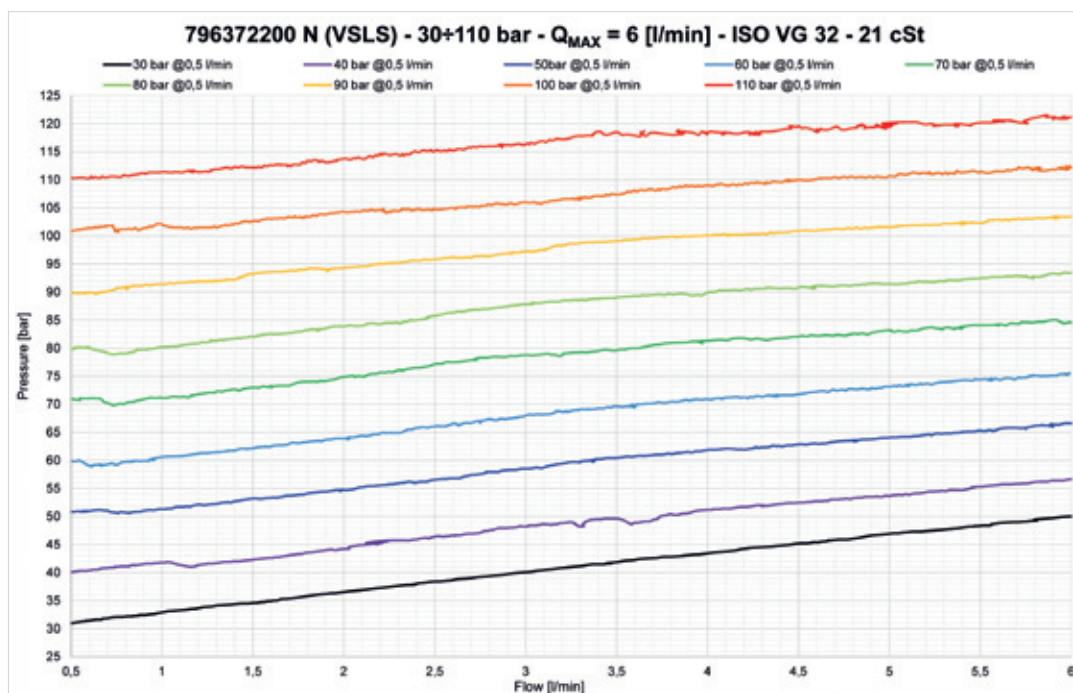
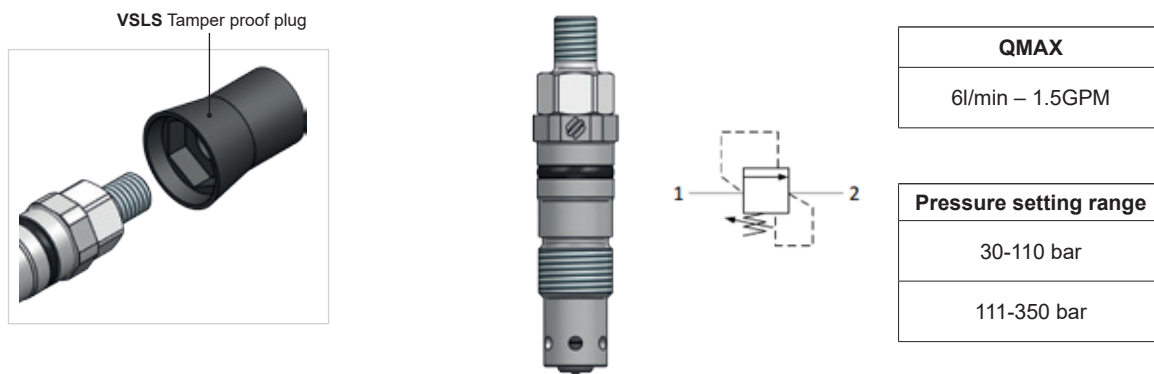
VD6ZLS- Z01D240 -EV2BDT/ILS(210)/P01C50-PRA.PRB-NLEA-KE2DT/
/P02C50-VA150A.VA150B-NLEA-KE2DT/U7G



Hydraulic Circuit



Load Sense Main Relief Valve - VLSL



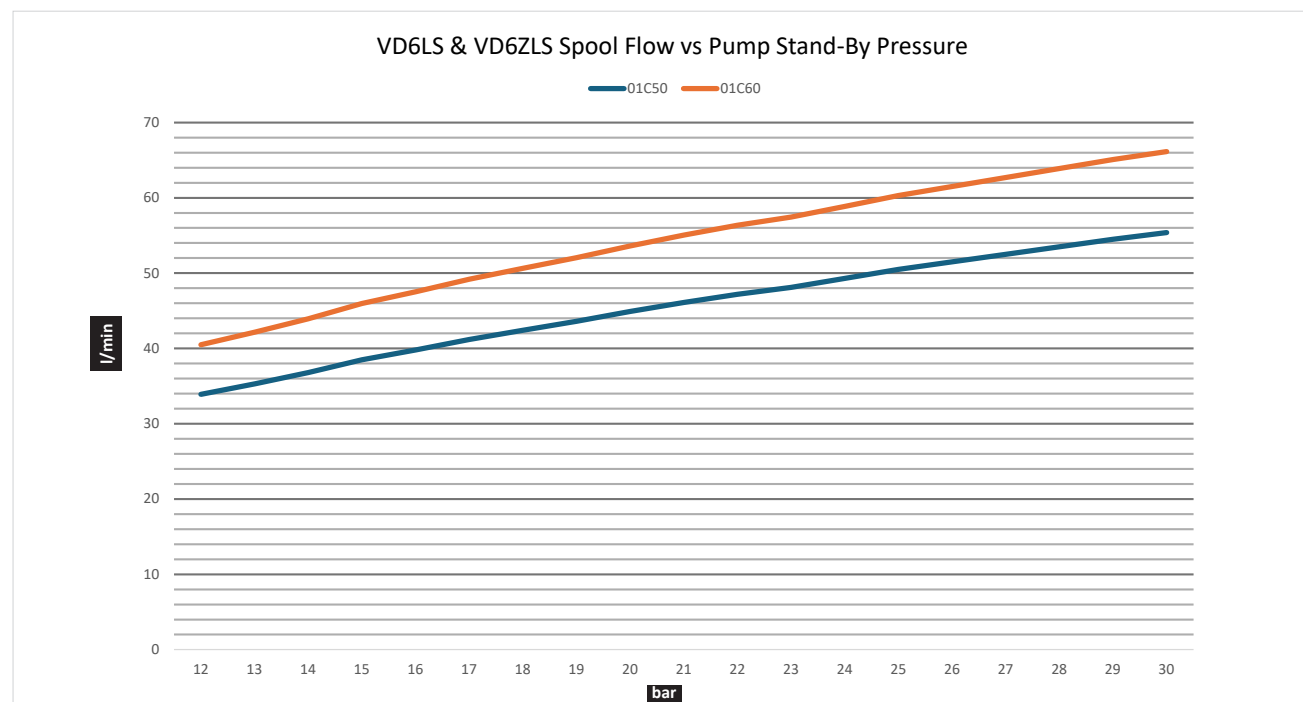
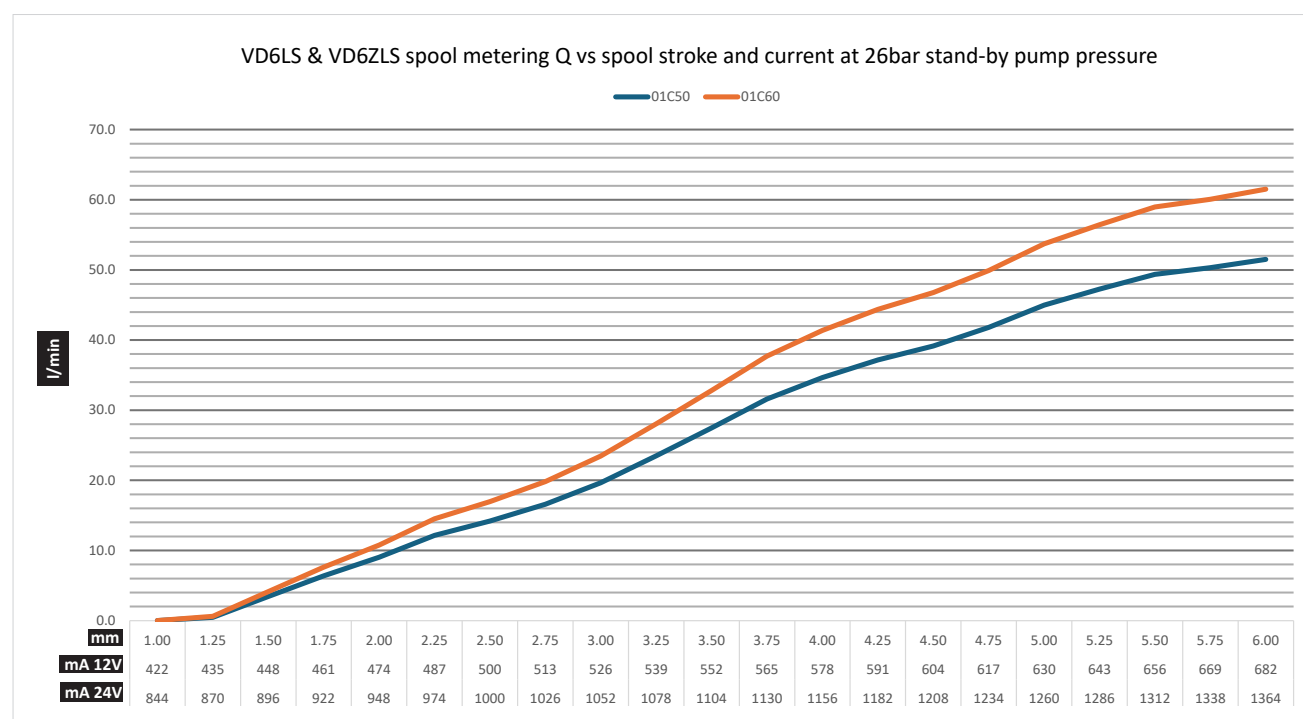


Spools

TYPE	FLOW CONTROL
01C60 - Double acting cylinder spool	45-60l/min @ 14-26 bar pump stand-by pressure
02C60 - Double acting motor spool	
01C50 - Double acting cylinder spool	35-50l/min @ 14-26 bar pump stand-by pressure
02C50 - Double acting motor spool	

Oil ISO VG32 at 21 cSt

Flow Vs Spool Stroke Metering Curves



EO.254.0325.11.00IM00



How to Order

► See Technical Catalogue **VD6A** (E0.05.1011.02.03)

VD6ZLS	Z01	D	210	-	EV2BDT	/	ILS	210	/	2	X	P	01C	60	-	VA	150	A	.	VA	150	B	-	NLE	A	-	KE2DT	/	U7	G
	A	B	C		D		E	F		G	H	I				L	M			L	M		N	O		P		Q	R	

A	INLET ELEMENT
	Z01-Z02-Z03-Z04

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 25 to 350 bar (360 to 5070 psi)

D	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

E	INTERMEDIATE LS PLATE
	ILS

F	VSLs SETTING
	30-110 bar (435 to 1595 psi)
	111-350 bar (1600 to 5070 psi)

G	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS

H	WORKING SECTIONS
P	Parallel circuit

I	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering

I	SPOOL NOMINAL FLOW
50	35-50l/min @ 14-26 bar pump stand-by pressure
60	45-60l/min @ 14-26 bar pump stand-by pressure

L	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

R	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

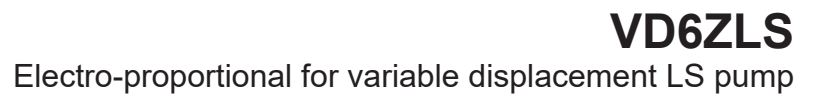
Q	OUTLET ELEMENT
	U7-U7L2

P	SPOOL POSITIONINGS
KE1JA	Electro-hydraulic proportional and ON-OFF control 12V - AMP JUNIOR TIMER
KE2JA	Electro-hydraulic proportional and ON-OFF control 24V - AMP JUNIOR TIMER
KE1DT	Electro-hydraulic proportional and ON-OFF control 12V - DEUTSCH DT04-2P
KE2DT	Electro-hydraulic proportional and ON-OFF control 24V - DEUTSCH DT04-2P

O	CONTROL SIDE
A	A port side

N	SPOOLS CONTROLS
NLE	Manual lever box with spool stroke adjuster, dual manual command.

M	PORT ON WHICH THE VALVE IS MOUNTED

[illegible]

VD6ZLS

Electro-proportional for variable displacement LS pump



Blank lined area for notes or specifications.

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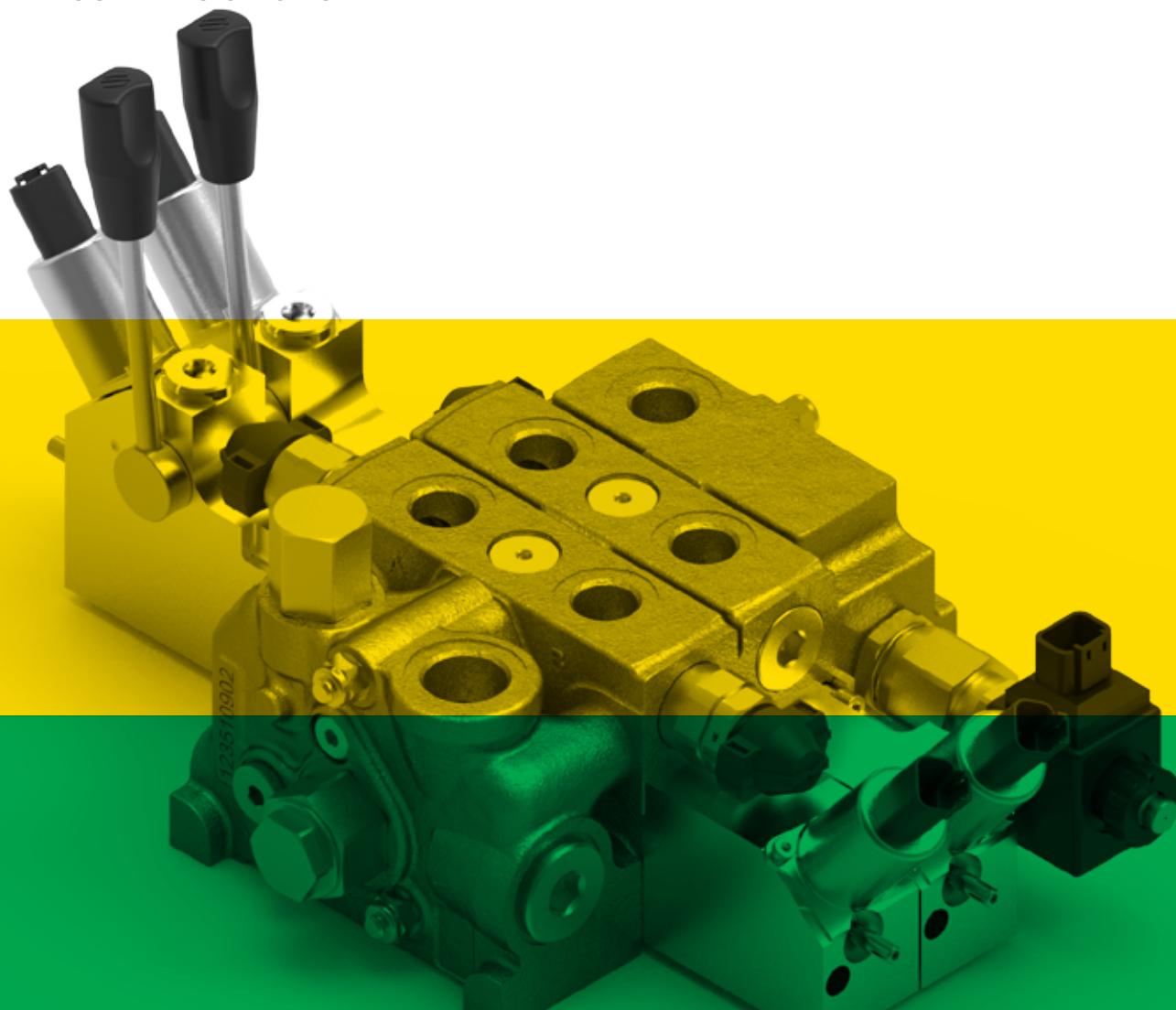
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VD8 Series

Directional Control Valve

Technical Brochure

E0.255.0325.11.00IM00



VD8Z
sectional control valve
with electro-hydraulic
proportional control

VD8LS
sectional control valve
load sense

VD8ZLS
sectional control valve load
sense and electro-hydraulic
proportional control



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001



Final revised edition - March 2025

Information and data in this catalogue are all referring to the standard product.
Salami's policy consists of a continuous product development; therefore, we reserve the rights to change product's specifications and data performances at any time and without any prior notice.

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VD8LS	14
VD8ZLS	22



Technical Data

Nominal Flow	Qn	75 l/min - (20 gpm US)
Max Flow	Q	90 l/min - (24 gpm US)
Max Pressure	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
	Drain port Tp	5 bar - (70 psi)
Spool Stroke (Positions 1 And 2)	± 7 mm - (0.28 in.)	
Number of sections	From 1 To 10	

Main Features

- Sectional design
- Parallel, Serie and Tandem Circuit
- Electro – hydraulic proportional spool control
- High metering spools
- Manual lever dual command
- Remote pilot pressure port
- Solenoid unloading pump flow
- Counter Pressure Valve
- Power Beyond HPCO
- Stackable with VD8A standard sections

Applications

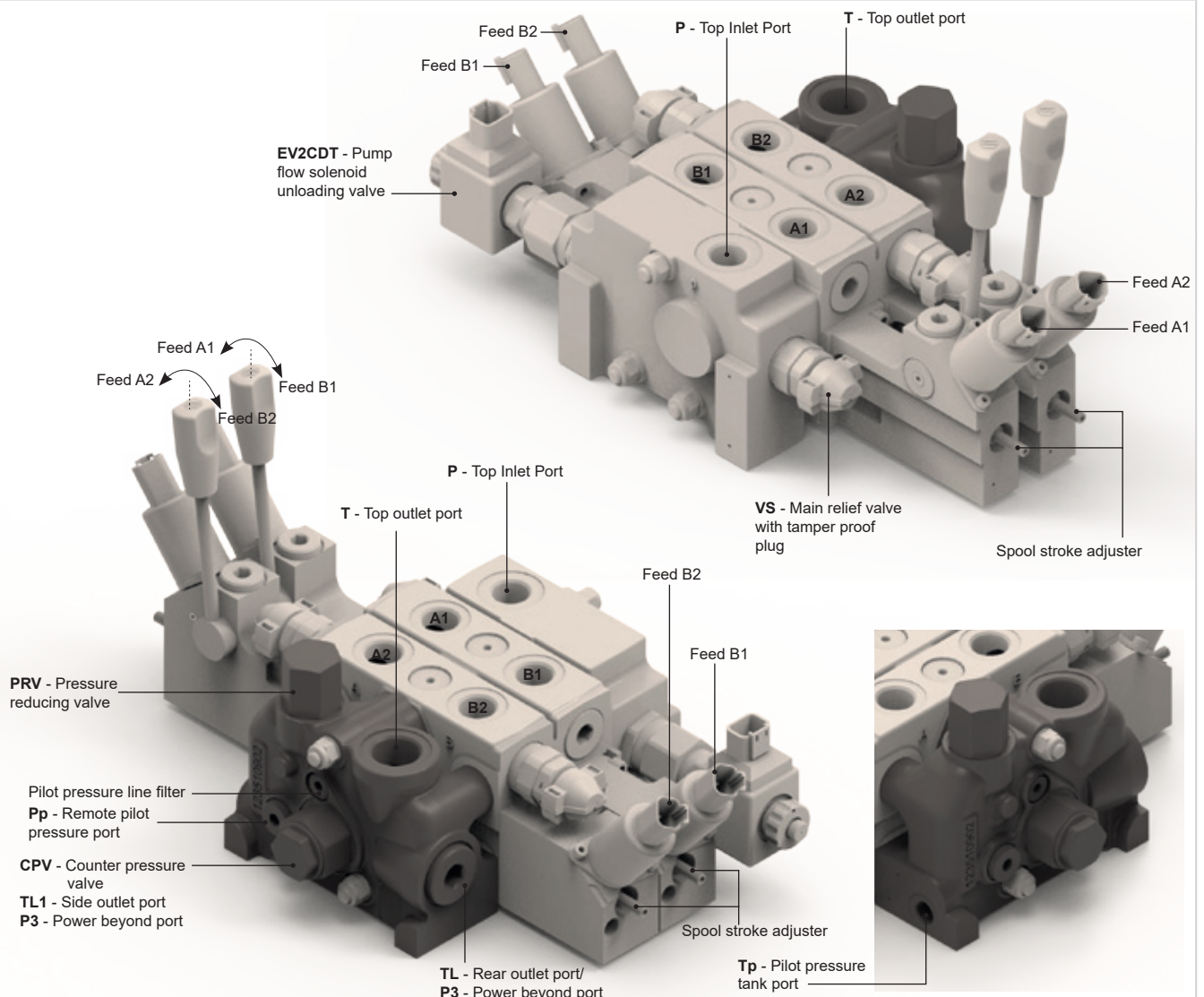
- Lifting Equipment
- Towing Trucks, Hydro-Excavation Trucks
- Garbage Compactors
- Agriculture Equipment
- Radio remote mobile equipment
- Material handling

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VD8Z vs VD8A

FEATURES	VD8Z	VD8A
INLET ELEMENT	VD8A standard	Standard
NEW OUTLET ELEMENT	Pressure reducing valve, pilot pressure remote port, drain port, counter back pressure valve CPV, power beyond HPCO	Standard
WORKING SECTIONS	Crossing pilot lines	Standard w/o pilot lines
STACKABLE WITH VD8A	Sections must be stacked before the outlet element and downstream the vd8a sections	Sections must be stacked upstream VD8Z sections
ELECTRO-HYDRAULIC PROPORTIONAL AND ON-OFF CONTROL	Fully integrated, no need of external pilot lines	NA
HYDRAULIC SPOOL CONTROL	Pilot pressure remote port used to feed hydraulic pilot joysticks	NA
METERING	High metering spools	Standard and high metering spools
WITH COUNTER PRESSURE VALVE CPV	Standard	Standard for H1/H2 control
WITHOUT COUNTER PRESSURE VALVE CPV	In case of HPCO or 8 bar guaranteed in the return line in all working conditions	In case of HPCO or 8 bar guaranteed in the return line in all working conditions



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Port Size and Thread

		P	PL	Tp	Pp	A/B	T	TL	TL1	P3
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X	X					
	G1/2	X	X			X				X
	G3/4						X	X	X	
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X	X					
	SAE10 (7/8-14 UNF)	X	X			X				X
	SAE12 (1-1/16 -12 UN)						X	X	X	

Valves

INLET ELEMENT VALVES		WORKING SECTION VALVES		OUTLET ELEMENT VALVE	
Main pressure relief valve direct type	VS	Service port relief	VA	Counter pressure valve	CPV
Pump flow solenoid unloading valve	EV1/EV2/EV3/EV4	Antishock and anticavitation valve	AR	Pressure reducing valve	PRV
Pump flow hydraulic unloading valve	EHV	Anticavitation valve	VR		
		Single/double acting conversion valve	CV		

Proportional Pressure Control Valve

ELECTRICAL DATA				
	KE1JA/KE1DT	KE2JA/KE2DT	ON-OFF	
VOLTAGE	12V	24V	12V	24V
MIN CURRENT	792mA	396mA	-	-
MAX CURRENT	1364mA	650mA	1400mA	700mA
RESISTANCE	4.72 Ω +/-5%	20.8 Ω +/-5%	4.72 Ω +/-5%	20.8 Ω +/-5%
PWM FREQUENCY	100HZ	100HZ	DIRECT CURRENT	DIRECT CURRENT
SUPER IMPOSED DITHER FREQUENCY	100HZ (AMPLITUDE 200mA)	100HZ (AMPLITUDE 100mA)	-	-
CONNECTOR	AMP JUNIOR TIMER (JA)			
	DEUTSCH DT04-2P (DT)			
PROTECTION CLASS	IP6K6			
HYDRAULIC DATA				
MAX VOLUME FLOW @ 6bar ΔP	2.5-5 l/min			
MAX PRESSURE FROM PRV	35bar			
MAX WORKING PRESSURE	25bar			
MAX TANK SIDE PRESSURE	5bar			
INTERNAL LEAKAGE @ 35bar 32cSt	< 0.06 l/min (DE-ENERGIZED) <0.15 l/min (ENERGIZED)			
CONTAMINATION LEVEL	MIN FILTRATION: 20/18/15 ACCORDING TO ISO 4406			
FILTERSCREEN SIZE	200 μm			

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Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS

	P	PL	T	TL	G	EV1/2/3/4	EHV	
01	OPEN	NA	NA	NA	NA	AV	AV	
02	PLUGGED	OPEN	NA	NA	NA	AV	AV	
03	OPEN	OPEN	NA	NA	NA	AV	AV	
21	OPEN	NA	NA	NA	TOP OPEN	AV	AV	
22	PLUGGED	OPEN	NA	NA	TOP OPEN	AV	AV	
23	OPEN	OPEN	NA	NA	TOP OPEN	AV	AV	
07	OPEN	PLUGGED	OPEN	PLUGGED	NA	NA	NA	
08	PLUGGED	OPEN	PLUGGED	OPEN	NA	NA	NA	
27	OPEN	NA	OPEN	PLUGGED	SIDE OPEN	NA	NA	
28	NA	OPEN	PLUGGED	OPEN	TOP OPEN	NA	NA	

OUTLET ELEMENT CONFIGURATIONS

		PRV	CPV	P3 (HPCO)	Pp	TP	T	TL	TL1	NOTES
STANDARD CONFIGURATIONS FOR Z AND Z + IP	U36	YES	NO	NO	PLUGGED	OPEN	OPEN	PLUGGED	PLUGGED	Min 8bar in the T line
	U37	YES	NO	NO	PLUGGED	OPEN	PLUGGED	OPEN	PLUGGED	Min 8bar in the T line
	U38	YES	NO	NO	PLUGGED	OPEN	PLUGGED	PLUGGED	OPEN	Min 8bar in the T line
	U39	YES	NO	NO	PLUGGED	OPEN	PLUGGED	PLUGGED	PLUGGED	Port T in the inlet element
	U19	YES	YES	NO	PLUGGED	OPEN	OPEN	PLUGGED	NA	
	U20	YES	YES	NO	PLUGGED	OPEN	PLUGGED	OPEN	NA	
	U26	YES	YES	NO	PLUGGED	OPEN	PLUGGED	PLUGGED	NA	Port T in the inlet element
	U27	YES	NO	YES	PLUGGED	OPEN	OPEN	PLUGGED	NA	
	U28	YES	NO	YES	PLUGGED	OPEN	PLUGGED	OPEN	NA	
	U32	YES	NO	YES	PLUGGED	OPEN	PLUGGED	PLUGGED	NA	Port T in the inlet element
	U33	YES	NO	PLUGGED	PLUGGED	OPEN	OPEN	PLUGGED	NA	
	U34	YES	NO	PLUGGED	PLUGGED	OPEN	PLUGGED	OPEN	NA	
	U35	YES	NO	PLUGGED	PLUGGED	OPEN	PLUGGED	PLUGGED	NA	Port T in the inlet element

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Inlet and Outlet Element Matching Configurations

OUTLET ELEMENT CONFIGURATIONS

		PRV	CPV	P3 (HPCO)	Pp	Tp	T	TL	TL1	NOTES
STANDARD CONFIGURATIONS FOR IP	U40	YES	NO	NO	OPEN	PLUGGED	OPEN	PLUGGED	PLUGGED	
	U41	YES	NO	NO	OPEN	PLUGGED	PLUGGED	OPEN	PLUGGED	
	U42	YES	NO	NO	OPEN	PLUGGED	PLUGGED	PLUGGED	OPEN	
	U43	YES	NO	NO	OPEN	PLUGGED	PLUGGED	PLUGGED	PLUGGED	Port T in the inlet element
	U44	YES	NO	YES	OPEN	PLUGGED	OPEN	PLUGGED	NA	
	U45	YES	NO	YES	OPEN	PLUGGED	PLUGGED	OPEN	NA	
	U46	YES	NO	YES	OPEN	PLUGGED	PLUGGED	PLUGGED	NA	Port T in the inlet element
	U47	YES	NO	PLUGGED	OPEN	PLUGGED	OPEN	PLUGGED	NA	
	U48	YES	NO	PLUGGED	OPEN	PLUGGED	PLUGGED	OPEN	NA	
	U49	YES	NO	PLUGGED	OPEN	PLUGGED	PLUGGED	PLUGGED	NA	Port T in the inlet element



Inlet and Outlet Element Matching Configurations

MATCHING CONFIGURATIONS

	01	02	03	07	08	21	22	23	27	28
U36	X	X	X			X	X	X		
U37	X	X	X			X	X	X		
U38	X	X	X			X	X	X		
U39				X	X				X	X
U19	X	X	X			X	X	X		
U20	X	X	X			X	X	X		
U26				X	X				X	X
U27	X	X	X			X	X	X		
U28	X	X	X			X	X	X		
U32				X	X				X	X
U33	X	X	X			X	X	X		
U34	X	X	X			X	X	X		
U35				X	X				X	X

MATCHING CONFIGURATIONS

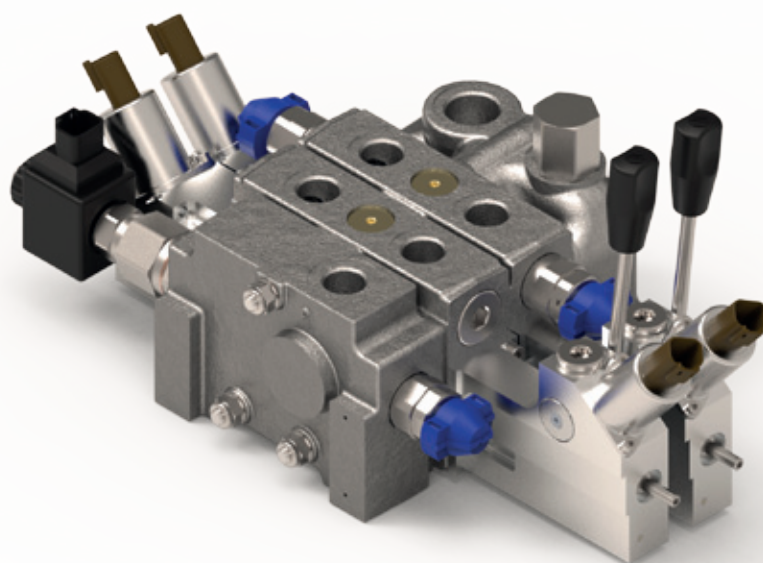
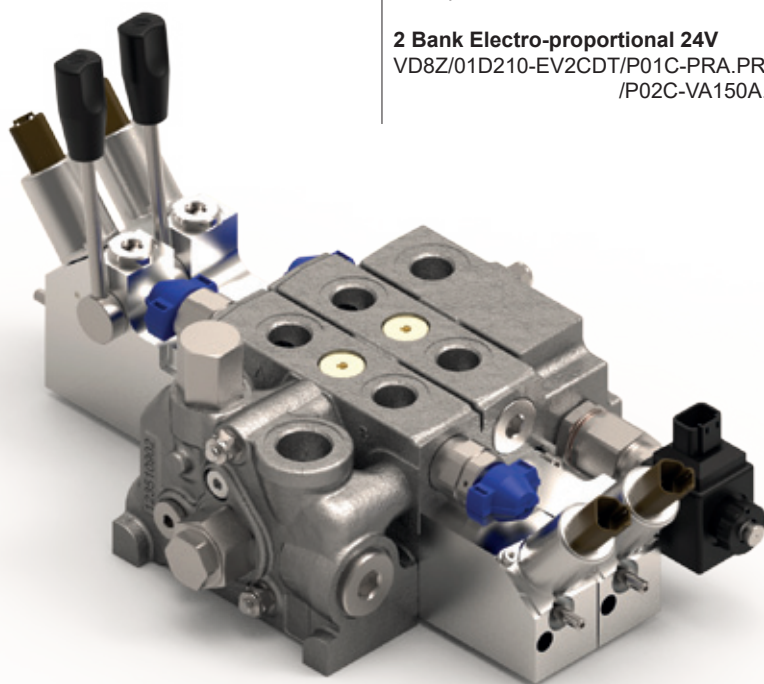
	01	02	03	07	08	21	22	23	27	28
U40	X	X	X			X	X	X		
U41	X	X	X			X	X	X		
U42	X	X	X			X	X	X		
U43				X	X				X	X
U44	X	X	X			X	X	X		
U45	X	X	X			X	X	X		
U46				X	X				X	X
U47	X	X	X			X	X	X		
U48	X	X	X			X	X	X		
U49				X	X				X	X

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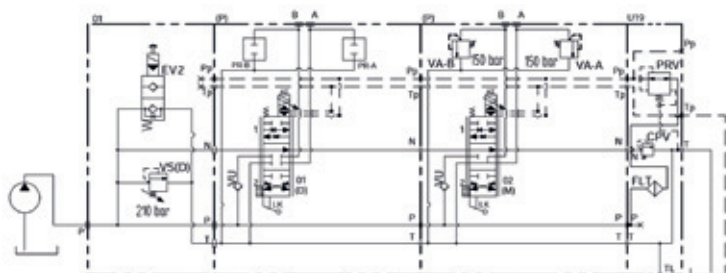
VD8Z Configurations

Example 1

2 Bank Electro-proportional 24V
VD8Z/01D210-EV2CDT/P01C-PRA.PRB-LKA-KE2DT/
/P02C-VA150A.VA150B-LKA-KE2DT/U19G



Hydraulic Circuit



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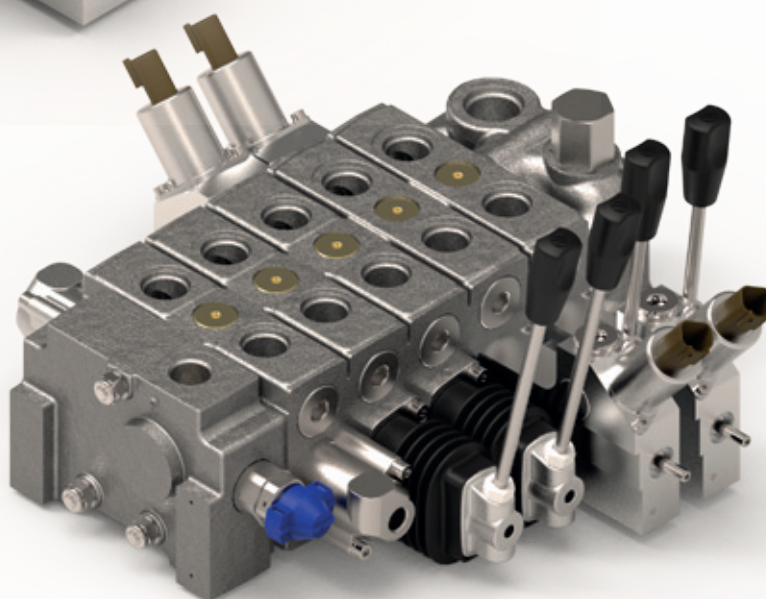
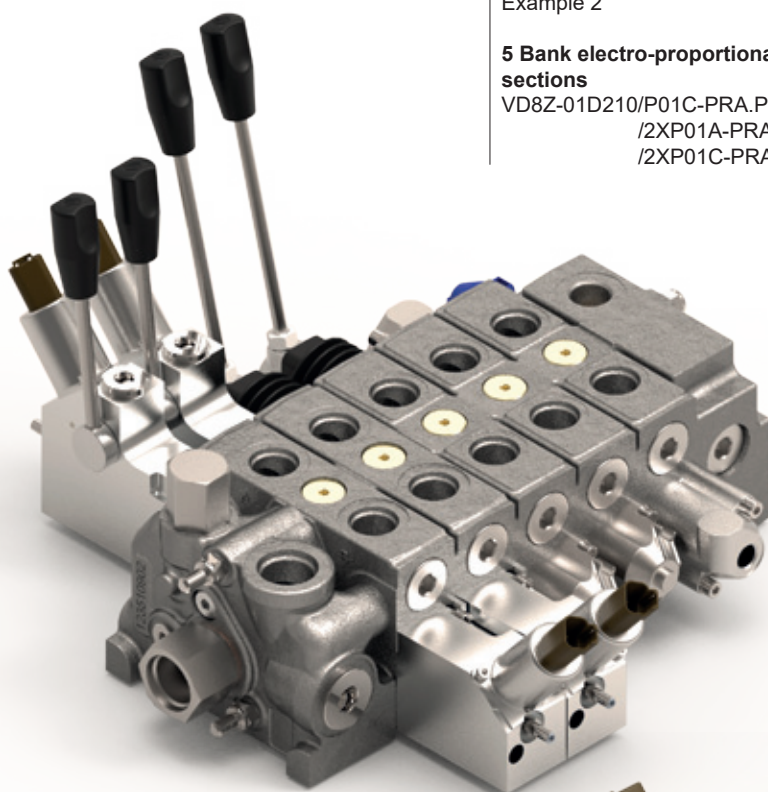


VD8Z Configurations

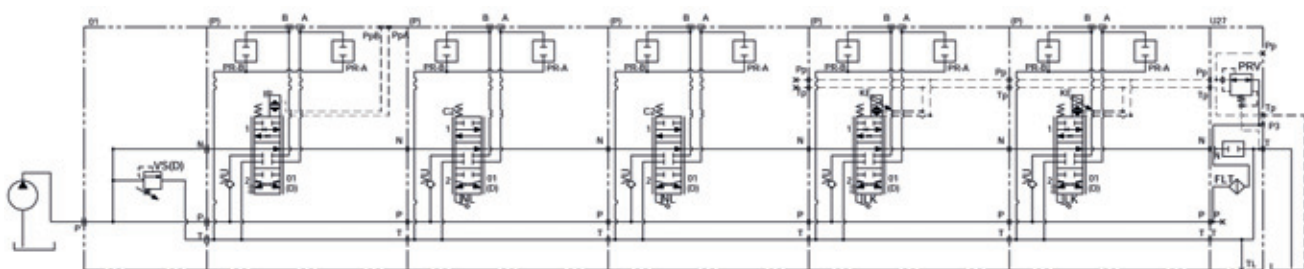
Example 2

5 Bank electro-proportional, hydraulic pilot and manual controlled sections

VD8Z-01D210/P01C-PRA.PRB-IP/
/2XP01A-PRA.PRB-NLA-C2/
/2XP01C-PRA.PRB-LKA-KE2DT/U27S



Hydraulic Circuit

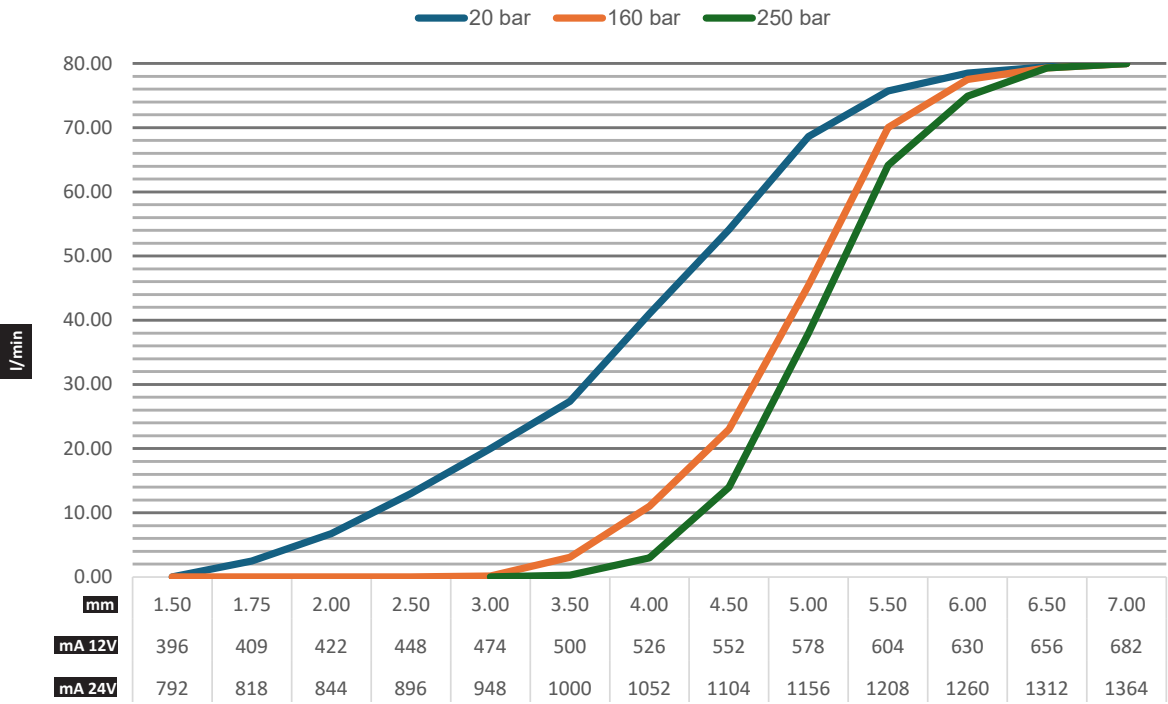




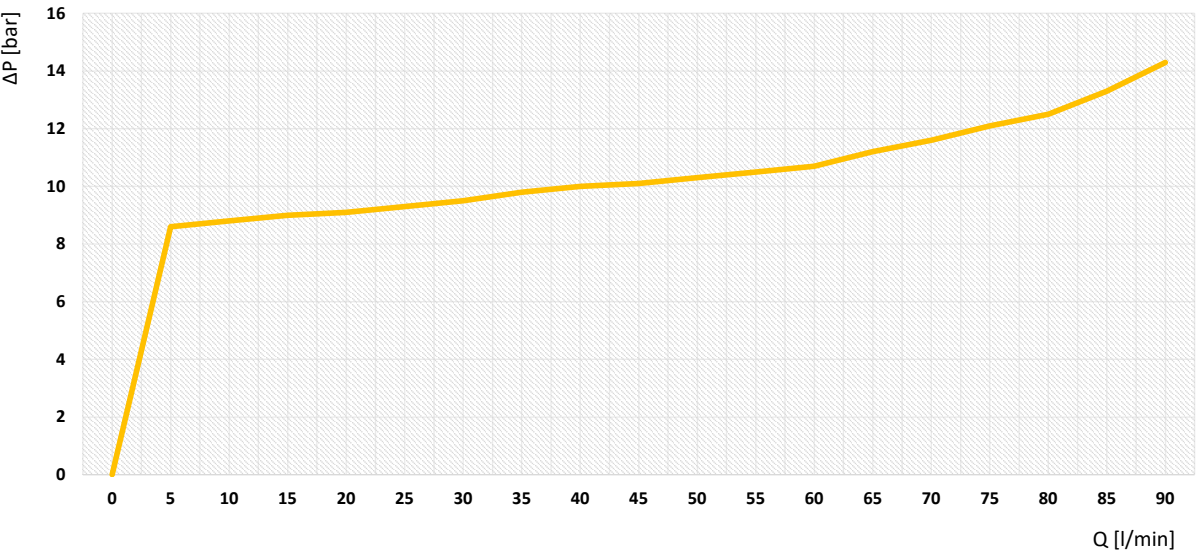
Flow Vs Spool Stroke Metering Curves

Oil ISO VG32 at 21 cSt

VD8Z spool metering Q vs spool stroke and current



CPV characteristic curve, cartridge valve only



E0.255.0325.11.00IM00



How to Order

► See Technical Catalogue **VD8A** (E0.06.0911.02.02)

VD8Z	01	D	210	-	EV2CDT	/	2	X	P	01C	-	VA	150	A	.	VA	150	B	-	LK	A	-	KE2DT	/	U19	G
	A	B	C		D		E	F	G			H		I		H		I		L	M		N		O	P

A	INLET ELEMENT
	01-02-03-21-22-23-07-08-27-28

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 20 to 300 bar (290 to 4350 psi)

	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

D	PUMP FLOW HYDRAULIC UNLOADING VALVE
	EHV

E	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS
----------	---

F	WORKING SECTIONS
P	Parallel circuit
S	Series circuit
T	Tandem circuit

G	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering
03C	Double acting motor spool ("B" port blocked) for hydraulic control - High metering
04C	Double acting motor spool ("A" port blocked) for hydraulic control - High metering

H	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

P	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

	OUTLET ELEMENT
	STANDARD CONFIGURATIONS FOR Z AND Z + IP
	U36-U37-U38-U39-U19-U20-U26 U27-U28-U32-U33-U34-U35

O	OUTLET ELEMENT
	STANDARD CONFIGURATIONS FOR IP
	U40-U41-U42-U43-U44 U45-U46-U47-U48-U49

N	SPOOL POSITIONINGS
KE1JA	Electro-hydraulic proportional and ON-OFF control 12V - AMP JUNIOR TIMER
KE2JA	Electro-hydraulic proportional and ON-OFF control 24V - AMP JUNIOR TIMER
KE1DT	Electro-hydraulic proportional and ON-OFF control 12V - DEUTSCH DT04-2P
KE2DT	Electro-hydraulic proportional and ON-OFF control 24V - DEUTSCH DT04-2P

M	CONTROL SIDE
A	A port side
B	B port side

L	SPOOLS CONTROLS
LK	Manual lever with spool stroke adjuster
SK	Without manual lever and with spool stroke adjuster

I	PORT ON WHICH THE VALVE IS MOUNTED
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Technical Data

Max Flow	Q	90 l/min - (24 gpm US)
Max Pressure	LS Main Relief bar	320 bar - (4600 psi)
	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
Spool Stroke (Positions 1 And 2)	± 7 mm - (0.28 in.)	
Number of sections	From 1 To 8	

Main Features

- Sectional design
- Parallel Circuit
- LS main relief valve and pump flow main relief valve
- Solenoid unloading pump flow
- High metering double acting cylinder and motor spools
- Spool Control: manual, manual joystick, cable remote, hydraulic piloted, pneumatic piloted.
- Spool positioning: spring centred, detent, friction detent

Applications

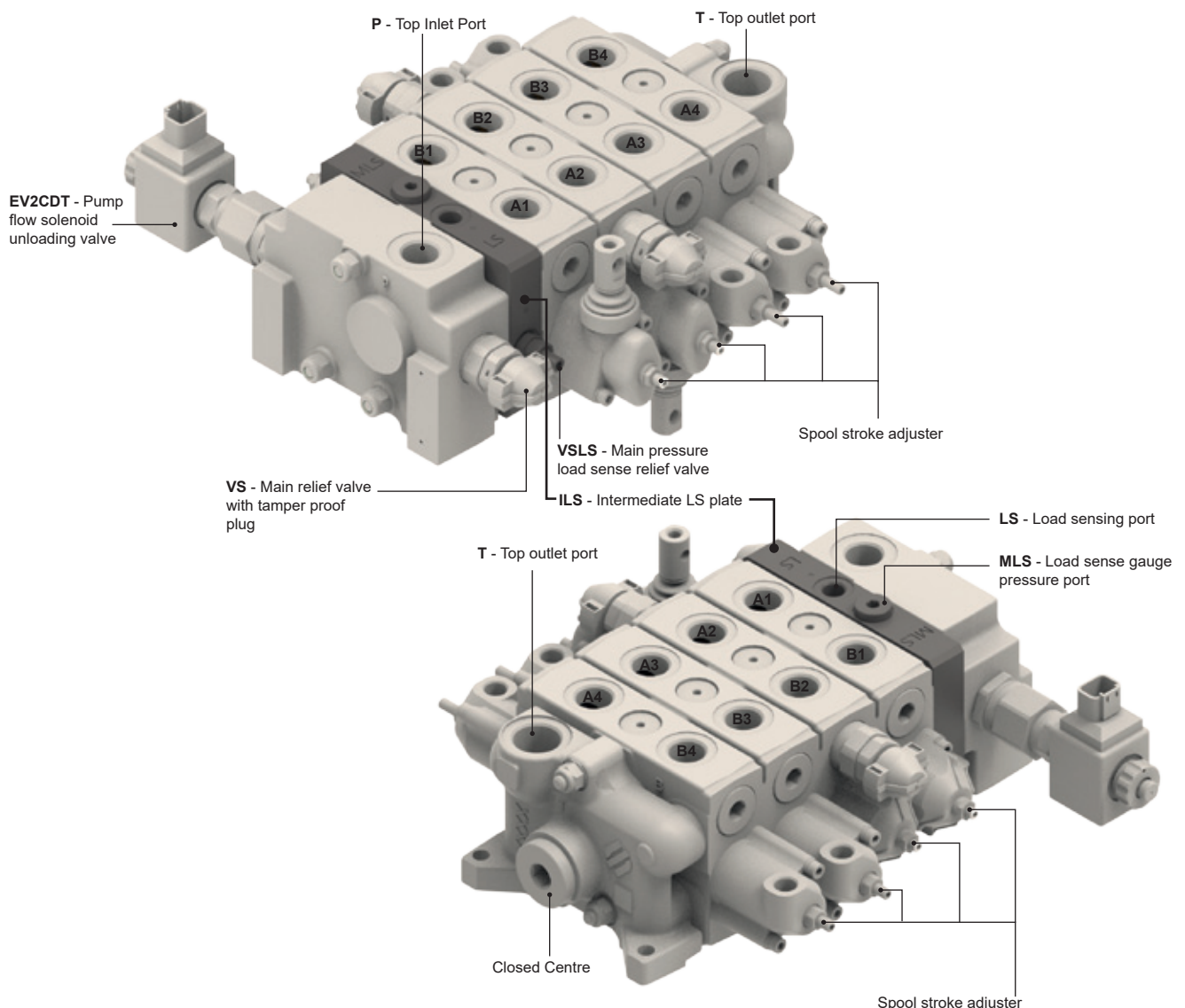
- Lifting Equipment
- Earth Moving Machinery
- Drill Rigs
- Agriculture Equipment
- Material handling

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VD8LS vs VD8A

FEATURES	VD8LS	VD8A
INLET ELEMENT	VD8A standard	Standard
NEW INTERMEDIATE LS PLATE	LS main relief valve, LS port	NA
OUTLET ELEMENT	VD8A standard	Standard U7
WORKING SECTIONS	Spool with shuttle valve and LS crossing line	Standard
SPOOL FLOW	70-90 L/min @ 14 - 26bar pump stand-by pressure	Standard & High metering
	50-70 L/min @ 14 - 26bar pump stand-by pressure	
	35-50 L/min @ 14-26bar pump stand-by pressure	
STACKABLE WITH VD8A	NA	-
SPOOL CONTROL	NL,NP, SL, TC, L1/L2, IP, PP, P1/P2	NL,NP, SL, TC, L1/L2, IP, PP, P1/P2, E7,E8,E9,E10
SPOOL POSITIONING	C2, C3, R2, R4, R5, C0	See VD8A catalogue
METERING	HIGH METERING SPOOLS	STANDARD AND HIGH METERING SPOOLS



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Port Size and Thread

		P	PL	LS	A/B	T	TL
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X			
	G1/2	X	X		X		
	G3/4					X	X
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X			
	SAE10 (7/8-14 UNF)	X	X		X		
	SAE12 (1-1/16-12 UN)					X	X

Valves

INLET ELEMENT VALVES		INTERMEDIATE PLATE VALVES		WORKING SECTION VALVES	
Main pressure relief valve direct type	VS - Pressure setting 20-30 bar higher than VSLS pressure setting	Main pressure load sense relief valve	VSLS	Service port relief	VA
Pump flow solenoid unloading valve	EV1/EV2/EV3/EV4			Antishock and Anticavitation valve	AR
Pump flow hydraulic unloading valve	EHV			Anticavitation valve	VR
				Single/double acting conversion valve	CV

Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS							
	P	PL	T	TL	G	EV1/EV2 EV3/EV4	EHV
01	OPEN	NA	NA	NA	NA	AV	AV
02	PLUGGED	OPEN	NA	NA	NA	AV	AV
03	OPEN	OPEN	NA	NA	NA	AV	AV
21	OPEN	NA	NA	NA	TOP OPEN	AV	AV
22	PLUGGED	OPEN	NA	NA	TOP OPEN	AV	AV
23	OPEN	OPEN	NA	NA	TOP OPEN	AV	AV
07	OPEN	PLUGGED	OPEN	PLUGGED	NA	NA	NA
08	PLUGGED	OPEN	PLUGGED	OPEN	NA	NA	NA
27	OPEN	NA	OPEN	PLUGGED	SIDE OPEN	NA	NA
28	NA	OPEN	PLUGGED	OPEN	TOP OPEN	NA	NA

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**Inlet and Outlet Element Matching Configurations****OUTLET ELEMENT CONFIGURATIONS**

	T	TL2	CLOSED CENTRE	
U7	OPEN	NA	YES	

INTERMEDIATE LS PLATE CONFIGURATIONS

	LS	
ILS	OPEN	

MATCHING CONFIGURATIONS

	01	02	03	21	22	23	07	08	27	28
U7	X	X	X	X	X	X	X	X	X	X

VD8LS

Closed Centre for variable displacement load sense pump

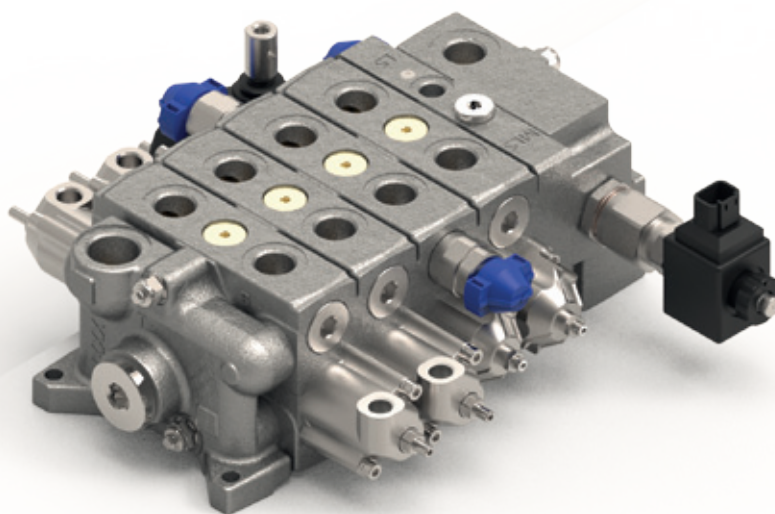
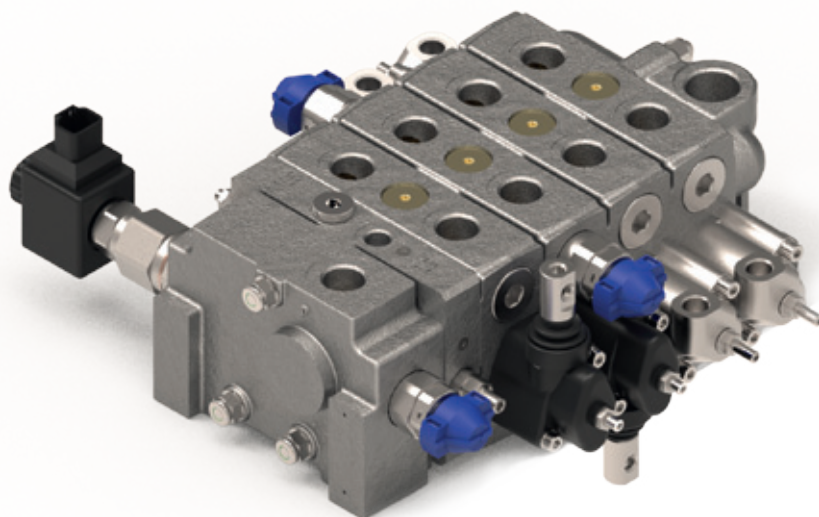


VD8LS Configurations

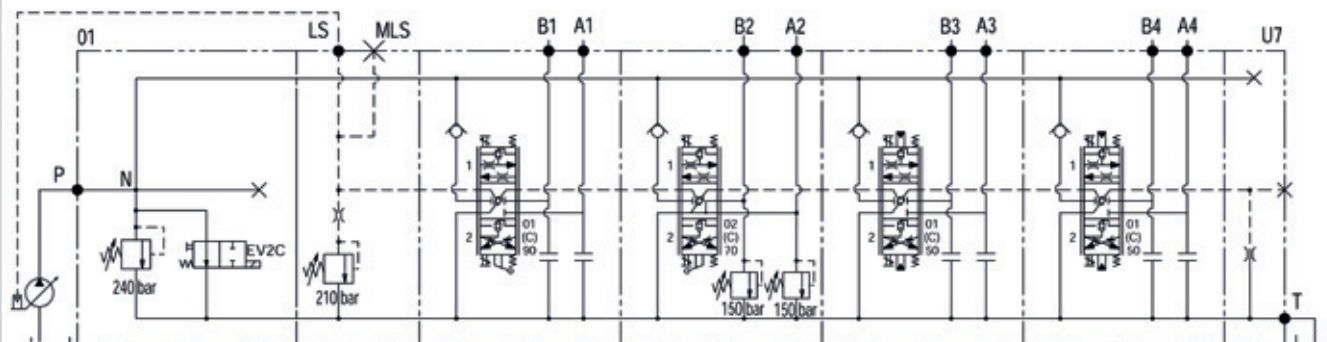
Example

4 Bank

VD8LS-01D240-EV2BDT/ILS(210)/P01C60-PRA.PRB-NLEA-C2E/
/P02C50-VA150A.VA150B-NLEA-C2E/
/2XP01C60-PRA.PRB-IP1RE/U7G



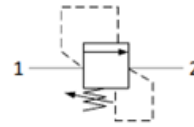
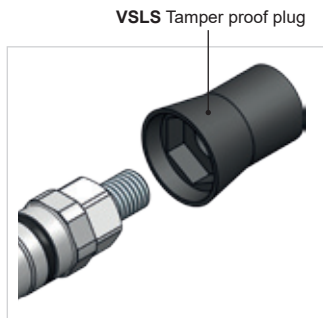
Hydraulic Circuit



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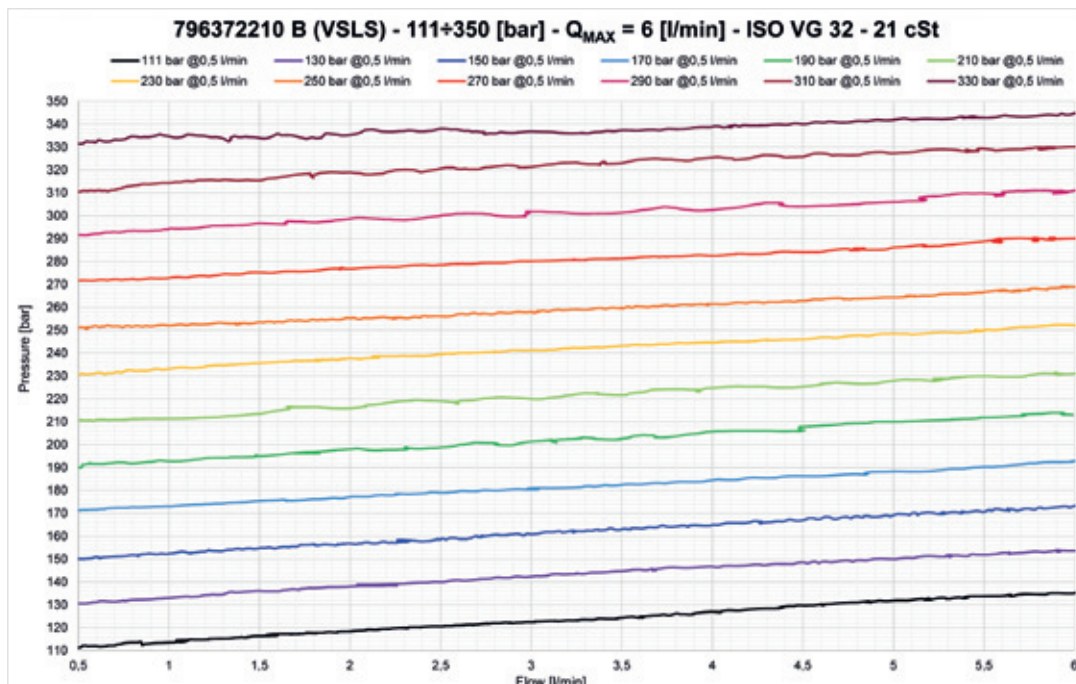
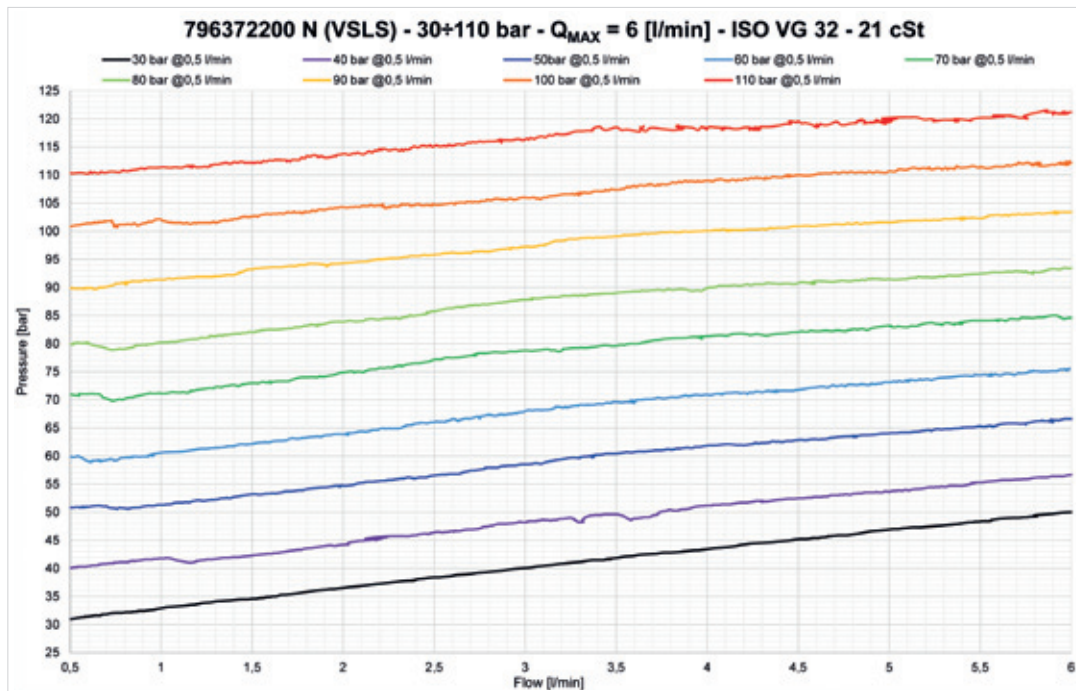


Load Sense Main Relief Valve - VSLS



Q _{MAX}
6l/min – 1.5GPM

Pressure setting range
30-110 bar
111-350 bar





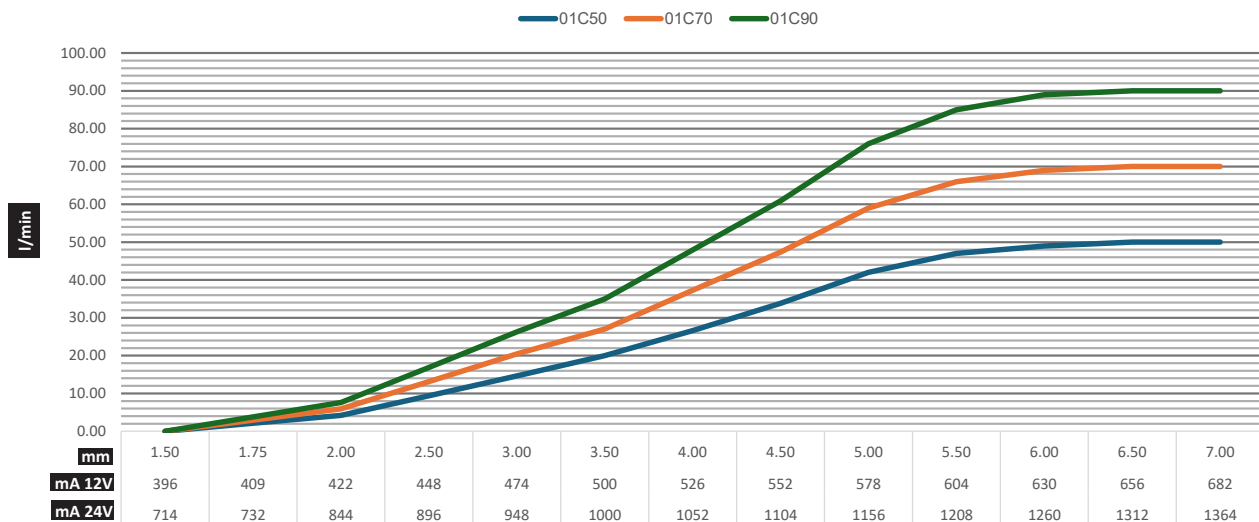
Spools

TYPE	FLOW CONTROL
01C90 - Double acting cylinder spool	65-90l/min @ 14-26 bar pump stand-by pressure
02C90 - Double acting motor spool	
01C70 - Double acting cylinder spool	50-70l/min @ 14-26 bar pump stand-by pressure
02C70 - Double acting motor spool	
01C50 - Double acting cylinder spool	35-50l/min @ 14-26 bar pump stand-by pressure
02C50 - Double acting motor spool	

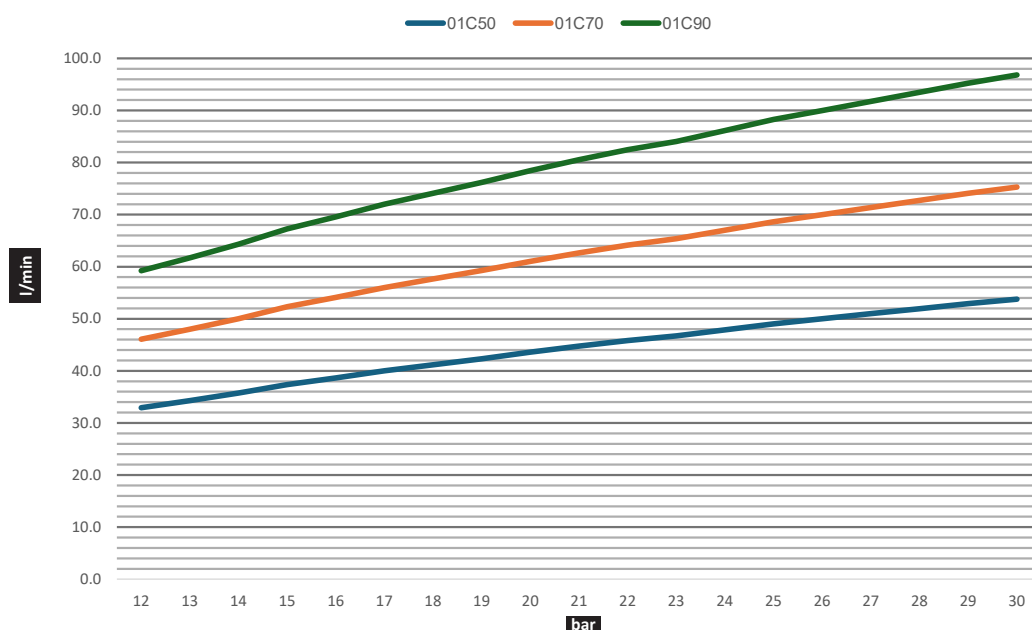
Flow Vs Spool Stroke Metering Curves

Oil ISO VG32 at 21 cSt

VD8LS & VD8ZLS Spool Metering at 26bar pump stand-by pressure



VD8LS & VD8ZLS Spool Flow vs Pump Stand-By Pressure



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How to Order

► See Technical Catalogue **VD8A** (E0.06.0911.02.02)

VD8LS	01	D	240	-	EV2CDT	/	ILS	210	/	4	X	P	01C	60	-	VA	150	A	.	VA	150	B	-	NLE	A	-	C2E	/	U7	G
	A	B	C		D		E	F		G	H		I			L	M		L	M		N	O		P		Q	R		

A	INLET ELEMENT
	01-02-03-21-22-23-07-08-27-28

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 25 to 350 bar (360 to 5070 psi)

D	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

D	PUMP FLOW HYDRAULIC UNLOADING VALVE
	EHV

E	INTERMEDIATE LS PLATE
	ILS

F	VSLs SETTING
	30-110 bar (435 to 1595 psi)
	111-350 bar (1600 to 5070 psi)

G	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS

H	WORKING SECTIONS
P	Parallel circuit

I	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering

I	SPOOL NOMINAL FLOW
50	35-50l/min @ 14-26 bar pump stand-by pressure
70	50-70l/min @ 14-26 bar pump stand-by pressure
90	65-90l/min @ 14-26 bar pump stand-by pressure

L	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

R	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

Q	OUTLET ELEMENT
	U7

P	SPOOL POSITIONINGS
C2E	Spring Centred Cap with spool stroke adjuster
C0	Friction Detent
R2	Two position 1&2 detent with spring return to neutral
R4	Detent on position 1 with spring return to neutral
R5	Detent on position 2 with spring return to neutral

O	CONTROL SIDE
A	A port side
B	B port side

N	SPOOLS CONTROLS
SL	Spool End with wiper seal, w/o lever box
NLE	Manual lever box with spool stroke adjuster
TC	Cable Control Connector Kit
PP	Pneumatic Pilot Control
IP1RE	Hydraulic Pilot Control with spool stroke adjusters and top ports

M	PORT ON WHICH THE VALVE IS MOUNTED

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Technical Data

Max Flow	Q	90 l/min - (24 gpm US)
Max Pressure	LS Main Relief bar	320 bar - (4600 psi)
	port P	350 bar - (5070 psi)
	ports A/B	350 bar - (5070 psi)
	port T	25 bar - (360 psi)
	Drain port Tp	5 bar - (70 psi)
Spool Stroke (Positions 1 And 2)	± 7 mm - (0.28 in.)	
Number of sections	From 1 To 8	

Main Features

- Sectional design
- Parallel Circuit
- LS main relief valve and pump flow main relief valve
- Electro – hydraulic proportional spool control
- High metering double acting cylinder and motor spools
- Manual lever dual
- Sectional design
- Parallel Circuit
- LS main relief valve and pump flow main relief valve
- Solenoid unloading pump flow
- High metering double acting cylinder and motor spools
- Spool Control: electro-hydraulic proportional and ON-OFF
- Manual lever dual command
- Spool stroke adjusters
- Remote pilot pressure port

Applications

- Lifting Equipment
- Towing Trucks, Garbage Compactors, Hydro-Excavation Trucks
- Drill Rigs
- Agriculture Equipment
- Material handling
- Radio remote mobile equipment

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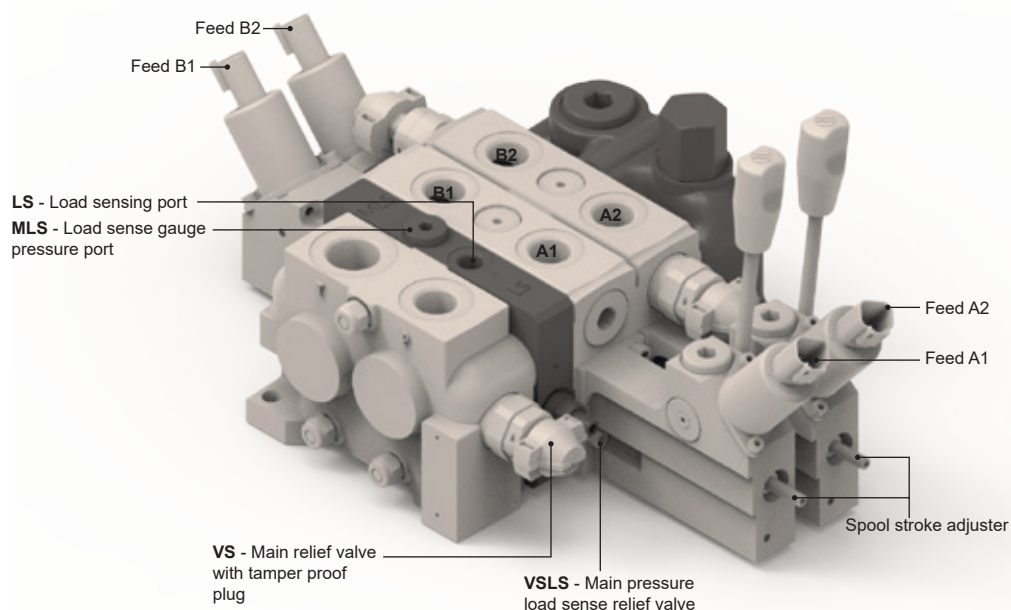
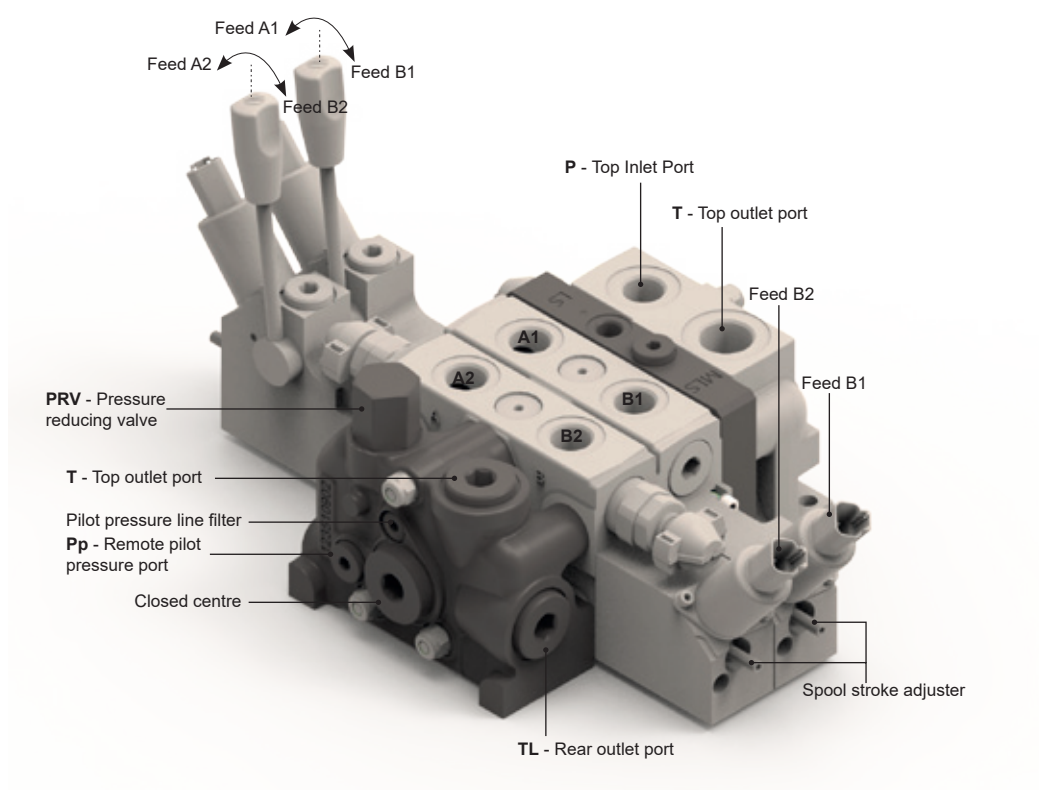


VD8ZLS vs VD8LS

FEATURES	VD8ZLS	VD8LS
INLET ELEMENT	VD8A standard	VD8A standard
NEW INTERMEDIATE LS PLATE	LS main relief valve, LS port, LS gauge port	LS main relief valve, LS port, LS gauge port
NEW OUTLET ELEMENT	Pressure reducing valve, pilot pressure remote port, drain port, power beyond HPCO plugged (closed centre)	Standard closed centre
WORKING SECTIONS	Spool with shuttle valve, LS crossing line, crossing pilot line	Spool with shuttle valve, LS crossing line
STACKABLE WITH VD8LS	Sections must be stacked before the outlet element and downstream the VD8LS sections	Sections must be stacked upstream VD8ZLS sections
ELECTRO-HYDRAULIC PROPORTIONAL AND ON-OFF CONTROL	Fully integrated, no need of external pilot lines	NA
HYDRAULIC SPOOL CONTROL	Pilot pressure remote port used to feed hydraulic pilot joysticks	NA
SPOOL FLOW	65-90 l/min @ 14-26 bar pump stand-by pressure	65-90 l/min @ 14-26 bar pump stand-by pressure
	50-70 l/min @ 14-26 bar pump stand-by pressure	50-70 l/min @ 14-26 bar pump stand-by pressure
	35-50 l/min @ 14-26 bar pump stand-by pressure	35-50 l/min @ 14-26 bar pump stand-by pressure
SPOOL CONTROL	SK,LK,NL,NP, SL, TC, L1/L2, IP, PP, P1/P2	NL,NP, SL, TC, L1/L2, IP, PP, P1/P2
SPOOL POSITIONING	C2, C3, R2, R4, R5, C0	C2, C3, R2, R4, R5, C0
STACKABLE WITH VD6A	NA	NA
OUTLET ELEMENT CONFIGURATION	Closed centre	Closed centre

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VD8ZLS Functional Description





Port Size and Thread

		P	PL	Tp	Pp	A/B	LS	T	TL	TL1	P3
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			X	X		X				
	G1/2	X	X			X					X
	G3/4							X	X	X	
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			X	X		X				
	SAE10 (7/8-14 UNF)	X	X			X					X
	SAE12 (1-1/16 -12 UN)							X	X	X	

Valves

INLET ELEMENT VALVES		INTERMEDIATE PLATE VALVES		WORKING SECTION VALVES		OUTLET ELEMENT VALVES	
Main pressure relief valve direct type	VS - Pressure setting 20-30 bar higher than VSLS pressure setting	Main pressure load sense relief valve	VSLS	Service port relief	VA	Pressure reducing valve	PRV
Pump flow solenoid unloading valve	EV1/EV2/EV3/ EV4			Antishock and Anticavitation valve	AR		
Pump flow hydraulic unloading valve	EHV			Anticavitation valve	VR		
				Single/double acting conversion valve	CV		

Proportional Pressure Control Valve

ELECTRICAL DATA

	KE1JA/KE1DT	KE2JA/KE2DT	ON-OFF	
VOLTAGE	12V	24V	12V	24V
MIN CURRENT	792mA	396mA	-	-
MAX CURRENT	1364mA	650mA	1400mA	700mA
RESISTANCE	4.72 Ω +/-5%	20.8 Ω +/-5%	4.72 Ω +/-5%	20.8 Ω +/-5%
PWM FREQUENCY	100HZ	100HZ	DIRECT CURRENT	DIRECT CURRENT
SUPER IMPOSED DITHER FREQUENCY	100HZ (AMPLITUDE 200mA)	100HZ (AMPLITUDE 100mA)	-	-
CONNECTOR	AMP JUNIOR TIMER (JA)			
	DEUTSCH DT04-2P (DT)			
PROTECTION CLASS	IP6K6			

HYDRAULIC DATA

MAX VOLUME FLOW @ 6bar ΔP	2.5-5 l/min
MAX PRESSURE FROM PRV	35bar
MAX WORKING PRESSURE	25bar
MAX TANK SIDE PRESSURE	5bar
INTERNAL LEAKAGE @ 35bar 32cSt	< 0.06 l/min (DE-ENERGIZED) <0.15 l/min (ENERGIZED)
CONTAMINATION LEVEL	MIN FILTRATION: 20/18/15 ACCORDING TO ISO 4406
FILTERSCREEN SIZE	200 μm

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Inlet and Outlet Element Matching Configurations

INLET ELEMENT CONFIGURATIONS

	P	PL	T	TL	G	EV1/2/3/4	EHV	
01	OPEN	NA	NA	NA	NA	AV	AV	
02	PLUGGED	OPEN	NA	NA	NA	AV	AV	
03	OPEN	OPEN	NA	NA	NA	AV	AV	
21	OPEN	NA	NA	NA	TOP OPEN	AV	AV	
22	PLUGGED	OPEN	NA	NA	TOP OPEN	AV	AV	
23	OPEN	OPEN	NA	NA	TOP OPEN	AV	AV	
07	OPEN	PLUGGED	OPEN	PLUGGED	NA	NA	NA	
08	PLUGGED	OPEN	PLUGGED	OPEN	NA	NA	NA	
27	OPEN	NA	OPEN	PLUGGED	SIDE OPEN	NA	NA	
28	NA	OPEN	PLUGGED	OPEN	TOP OPEN	NA	NA	

OUTLET ELEMENT CONFIGURATIONS

		PRV	CPV	CLOSED CENTRE	Pp	TP	T	TL	TL1	NOTES
STANDARD CONFIGURATIONS FOR Z AND Z + IP	U33	YES	NO	YES	PLUGGED	OPEN	OPEN	PLUGGED	NA	
	U34	YES	NO	YES	PLUGGED	OPEN	PLUGGED	OPEN	NA	
	U35	YES	NO	YES	PLUGGED	OPEN	PLUGGED	PLUGGED	NA	Port T in the inlet element
STANDARD CONFIGURATIONS FOR IP	U47	YES	NO	YES	OPEN	PLUGGED	OPEN	PLUGGED	NA	
	U48	YES	NO	YES	OPEN	PLUGGED	PLUGGED	OPEN	NA	
	U49	YES	NO	YES	OPEN	PLUGGED	PLUGGED	PLUGGED	NA	Port T in the inlet element

INTERMEDIATE LS PLATE CONFIGURATIONS

	LS	
ILS	OPEN	

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**Inlet and Outlet Element Matching Configurations****MATCHING CONFIGURATIONS**

	01	02	03	07	08	21	22	23	27	28
U33	X	X	X			X	X	X		
U34	X	X	X			X	X	X		
U35				X	X				X	X
U47	X	X	X			X	X	X		
U48	X	X	X			X	X	X		
U49				X	X				X	X

VD8ZLS

Electro-proportional for variable displacement LS pump

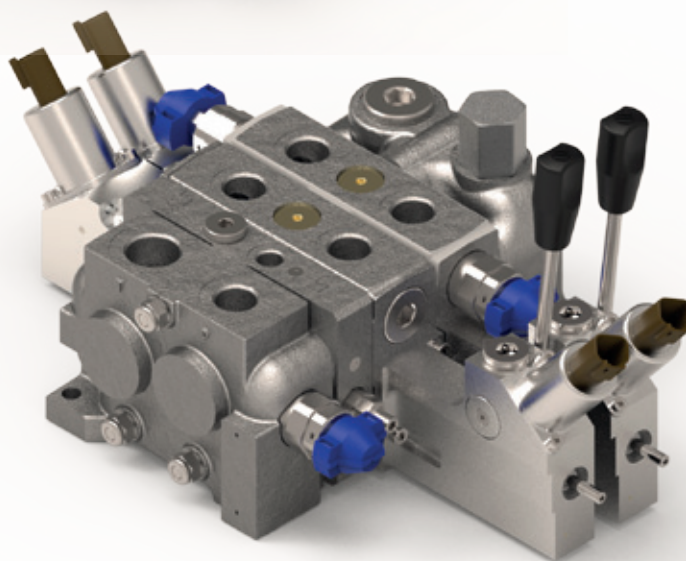
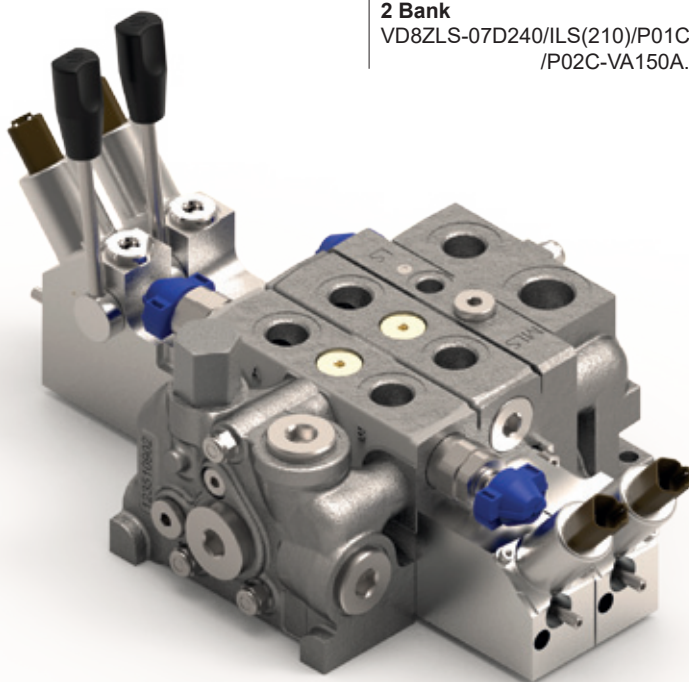


VD8ZLS Configurations

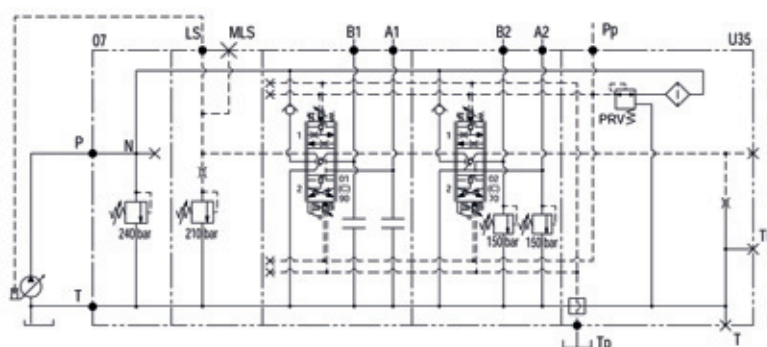
Example

2 Bank

VD8ZLS-07D240/ILS(210)/P01C-PRA.PRB-LKA-KE2DT/
/P02C-VA150A.VA150B-LKA-KE2DT/U35G



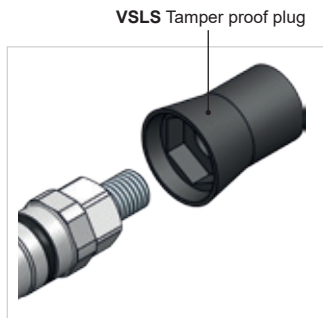
Hydraulic Circuit



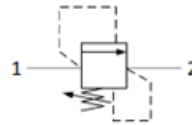
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Load Sense Main Relief Valve - VSLS



VSLS Tamper proof plug



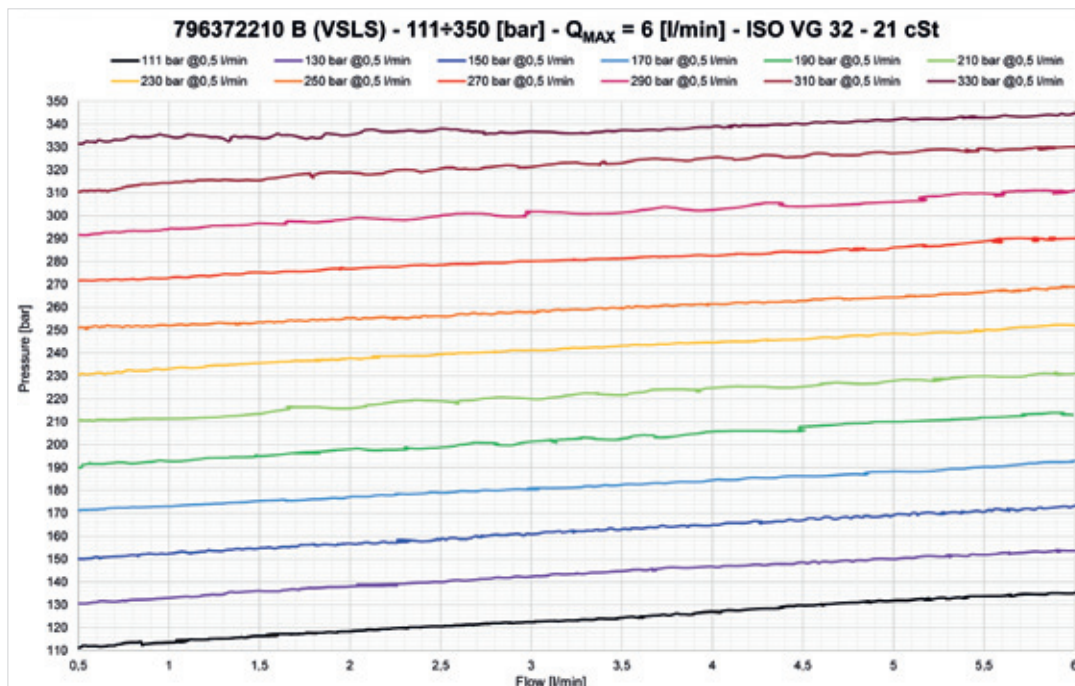
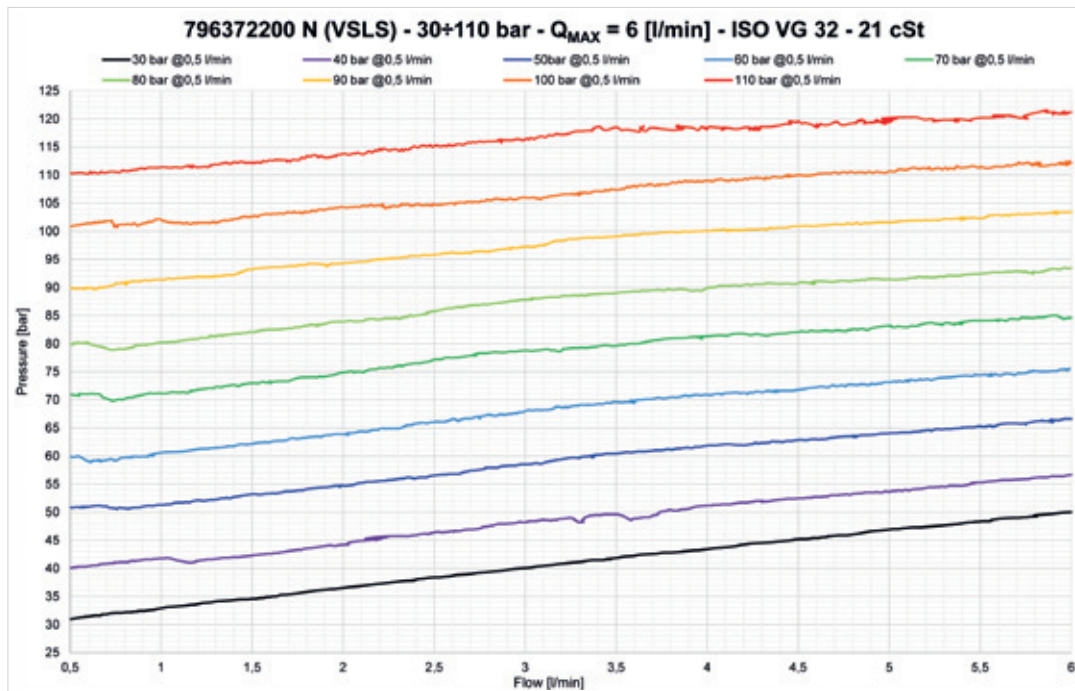
Q_{MAX}

6l/min – 1.5GPM

Pressure setting range

30-110 bar

111-350 bar



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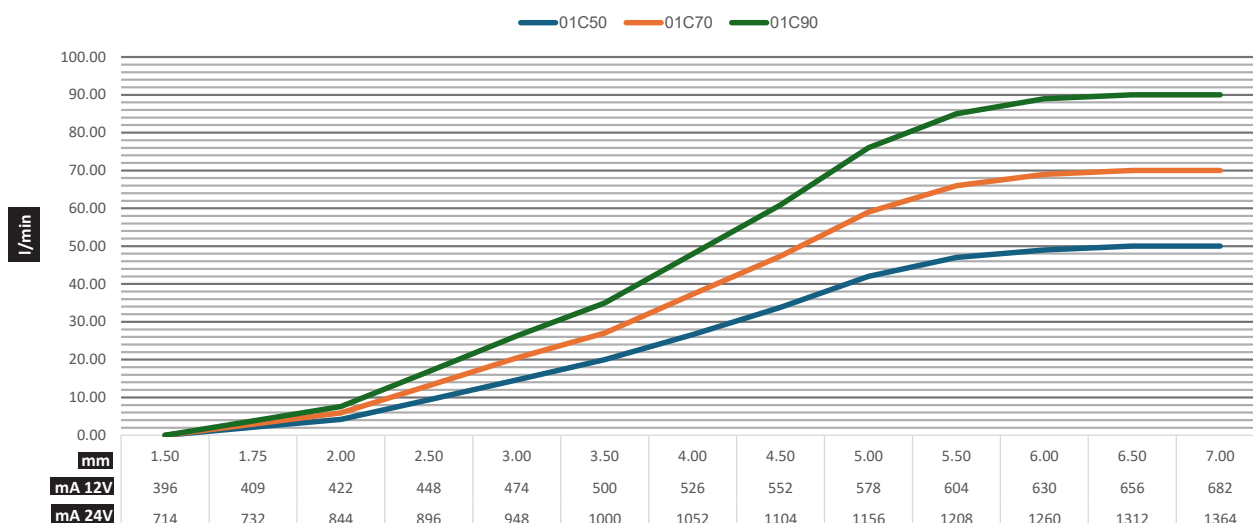
Spools

TYPE	FLOW CONTROL
01C90 - Double acting cylinder spool	65-90l/min @ 14-26 bar pump stand-by pressure
02C90 - Double acting motor spool	
01C70 - Double acting cylinder spool	50-70l/min @ 14-26 bar pump stand-by pressure
02C70 - Double acting motor spool	
01C50 - Double acting cylinder spool	35-50l/min @ 14-26 bar pump stand-by pressure
02C50 - Double acting motor spool	

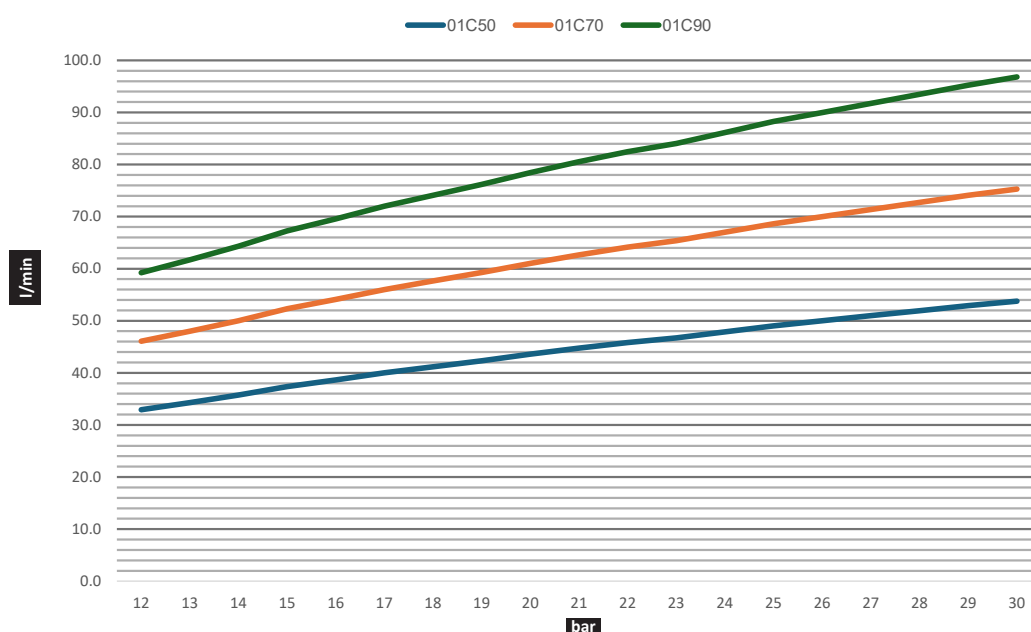
Flow Vs Spool Stroke Metering Curves

Oil ISO VG32 at 21 cSt

VD8LS & VD8ZLS Spool Metering at 26bar pump stand-by pressure



VD8LS & VD8ZLS Spool Flow vs Pump Stand-By Pressure



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How to Order

► See Technical Catalogue **VD8A** (E0.06.0911.02.02)

VD8ZLS	01	D	210	-	EV2	/	ILS	210	/	2	X	P	01C	60	-	VA	150	A	.	VA	150	B	-	LK	A	-	KE2DT	/	U7	G
	A	B	C	D	E	F	G	H	I							L	M			L	M	N	O	P			Q	R		

A	INLET ELEMENT
	01-02-03-21-22-23-07-08-27-28

B	MAIN RELIEF VALVE
D	Direct main relief valve
W	Without main relief valve

C	MAIN RELIEF SETTING
	From 25 to 350 bar (360 to 5070 psi)

	PUMP FLOW SOLENOID UNLOADING VALVE
	EV1-EV2-EV3-EV4

D	PUMP FLOW HYDRAULIC UNLOADING VALVE
	EHV

E	INTERMEDIATE LS PLATE
	ILS

F	VSLs SETTING
	30-110 bar (435 to 1595 psi)
	111-350 bar (1600 to 5070 psi)

G	NUMBER OF IDENTICAL CONSECUTIVE SECTIONS
----------	---

H	WORKING SECTIONS
P	Parallel circuit

I	SPOOL TYPES
01C	Double acting spool for hydraulic control High metering
02C	Double acting motor spool for hydraulic control High metering

I	SPOOL NOMINAL FLOW
50	35-50l/min @ 14-26 bar pump stand-by pressure
70	50-70l/min @ 14-26 bar pump stand-by pressure
90	65-90l/min @ 14-26 bar pump stand-by pressure

L	AUXILIARY VALVES
VA	Service port relief
AR	Antishock and Anticavitation valve
VR	Anticavitation valve
CV	Single/double acting conversion valve

R	PORTS
G	GAS - BSP Threaded (ISO 228)
S	SAE UN - UNF Threaded (ISO 725)

Q	OUTLET ELEMENT STANDARD CONFIGURATIONS FOR Z AND Z + IP
	U33-U34-U35

	OUTLET ELEMENT STANDARD CONFIGURATIONS FOR IP
	U47-U48-U49

P	SPOOL POSITIONINGS
KE1JA	Electro-hydraulic proportional and ON-OFF control 12V - AMP JUNIOR TIMER
KE2JA	Electro-hydraulic proportional and ON-OFF control 24V - AMP JUNIOR TIMER
KE1DT	Electro-hydraulic proportional and ON-OFF control 12V - DEUTSCH DT04-2P
KE2DT	Electro-hydraulic proportional and ON-OFF control 24V - DEUTSCH DT04-2P

O	CONTROL SIDE
A	A port side
B	B port side

N	SPOOLS CONTROLS
LK	Manual lever with spool stroke adjuster
SK	Without manual lever and with spool stroke adjuster

M	PORT ON WHICH THE VALVE IS MOUNTED
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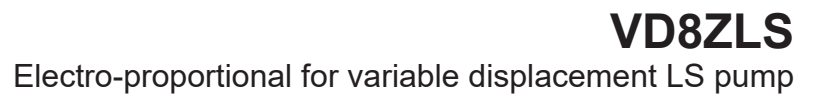
VD8ZLS

Electro-proportional for variable displacement LS pump



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VD8ZLS

Electro-proportional for variable displacement LS pump



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